ALTUSCN™
Enterprise KVM Solutions by ATEN

Hideaway™ LCD KVM Switch
KL3116
User Manual

www.aten.com

FCC Information

This is an FCC Class A product. In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures.

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

RoHS

This product is RoHS compliant.

SJ/T 11364-2006

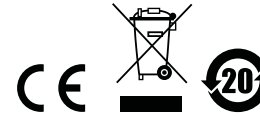
The following contains information that relates to China.

部件名称	有毒有害物质或元素					
	铅	汞	镉	六价铬	多溴联苯	多溴二苯醚
电器部件	●	○	○	○	○	○
机构部件	○	○	○	○	○	○

○: 表示该有毒有害物质在该部件所有均质材料中的含量均在SJ/T 11363-2006规定的限量要求之下。

●: 表示符合欧盟的豁免条款，但该有毒有害物质至少在该部件的某一均质材料中的含量超出SJ/T 11363-2006的限量要求。

×: 表示该有毒有害物质至少在该部件的某一均质材料中的含量超出SJ/T 11363-2006的限量要求。



User Information

Online Registration

Be sure to register your product at our online support center:

International	http://support.aten.com
North America	http://www.aten-usa.com/product_registration

Telephone Support

For telephone support, call this number:

International	886-2-8692-6959
China	86-10-5255-0110
Japan	81-3-5323-7178
Korea	82-2-467-6789
North America	1-888-999-ATEN ext 4988
United Kingdom	44-8-4481-58923

User Notice

All information, documentation, and specifications contained in this manual are subject to change without prior notification by the manufacturer. The manufacturer makes no representations or warranties, either expressed or implied, with respect to the contents hereof and specifically disclaims any warranties as to merchantability or fitness for any particular purpose. Any of the manufacturer's software described in this manual is sold or licensed *as is*. Should the programs prove defective following their purchase, the buyer (and not the manufacturer, its distributor, or its dealer), assumes the entire cost of all necessary servicing, repair and any incidental or consequential damages resulting from any defect in the software.

The manufacturer of this system is not responsible for any radio and/or TV interference caused by unauthorized modifications to this device. It is the responsibility of the user to correct such interference.

The manufacturer is not responsible for any damage incurred in the operation of this system if the correct operational voltage setting was not selected prior to operation. PLEASE VERIFY THAT THE VOLTAGE SETTING IS CORRECT BEFORE USE.

Package Contents

Basic Package

The basic KL3116 package consists of:

1 KL3116 Hideaway™ LCD KVMP Switch with Standard Rack Mount Kit

2 Custom KVM Cable Sets

1 Custom Console Cable Set

1 Firmware Upgrade Cable

1 Power Cord

1 User Manual*

1 Quick Start Guide

Optional Equipment

Depending on any optional equipment that you may have purchased, one of the following may be included in your package:

- Standard Rack Mount Kit - Long
- Easy Installation Rack Mount Kit - Short
- Easy Installation Rack Mount Kit - Long

Check to make sure that all of the components are present and in good order. If anything is missing, or was damaged in shipping, contact your dealer.

Read this manual thoroughly and follow the installation and operation procedures carefully to prevent any damage to the switch or to any other devices on the KL3116 installation.

***** Changes may have been made to the manual since it was printed. Please visit our website to check for the most up-to-date version.

Copyright © 2006 ATEN® International Co., Ltd.
Manual Part No. PAPE-0262-AX3G
F/W Version: 1.8.171
Manual Date: 2010-05-27

Altusen and the Altusen logo are registered trademarks of ATEN International Co., Ltd. All rights reserved.
All other brand names and trademarks are the registered property of their respective owners.

Contents

FCC Information ii
RoHS. ii
SJ/T 11364-2006. ii
User Information iii
Online Registration iii
Telephone Support iii
User Notice iii
Package Contents. iv
Basic Package. iv
Optional Equipment. iv
About This Manual viii
Overview viii
Conventions ix
Product Information. ix

Chapter 1.
Introduction
Overview 1
Features 2
System Requirements. 4
Computers. 4
Cables 4
Operating Systems 5
Components 6
Front View 6
Keyboard Module 7
LCD Module 8
Rear View 9

Chapter 2.
Installation
Before you Begin. 11
Standard Rack Mounting. 12
Single Stage Installation 14
Daisy Chaining 17

Chapter 3.
Basic Operation
Opening the Console 19
Opening Separately. 19
Opening Together 21
Operating Precautions 22
Closing the Console 23

LCD OSD Configuration 25
The LCD Buttons. 25
LCD Adjustment Settings 26
Hot Plugging 27
Switching Station Positions 27
Hot Plugging KVM Ports 27
Powering Off and Restarting. 27
Port Selection 28
Port ID Numbering 28

Chapter 4.
OSD Operation
OSD Overview 29
Logging In 29
OSD Main Screen. 30
OSD Main Screen Headings. 31
OSD Navigation 31
OSD Functions 32
F1 GOTO 32
F2 LIST 33
F3 SET 34
F4 ADM 36
F5 SKP 40
F6 BRC 41
F7 SCAN 42
F8 LOUT 42

Chapter 5.
Hotkey Operation
Overview. 43
Hotkey Port Access 44
Invoking Hotkey Mode. 44
Exiting Hotkey Mode 44
Hotkey Mode Operation 44
Hotkey Mode Characteristics 44
Selecting the Active Port 45
Auto Scan Mode 46
Invoking Auto Scan: 46
Pausing Auto Scan 46
Exiting AutoScan Mode 46
Skip Mode 47
Hotkey Configuration 48
Alternate Hotkey Invocation Keys 48
Alternate OSD Invocation Keys. 48
Port OS Configuration 49
Miscellaneous Actions. 49

Hotkey Summary Table. 50

Chapter 6.
Keyboard Emulation
Mac Keyboard Emulation 51
Sun Keyboard Emulation 52

Chapter 7.
Firmware Upgrade
Preparation 53
Starting the Upgrade 54
Upgrade Succeeded 56
Upgrade Failed 57
Firmware Upgrade Recovery 57

Appendix
Safety Instructions. 59
General 59
Rack Mounting 61
Technical Support 62
International. 62
North America 62
Connection Table 63
OSD Factory Default Settings 64
Clear Login Information. 65
Optional Rack Mounting 66
Dedicated Invocation Keys 70
Specifications 71
Troubleshooting 72
General 72
Sun Systems 73
Limited Warranty 74

About This Manual

This User Manual is provided to help you get the most from your KL3116 system. It covers all aspects of installation, configuration and operation. An overview of the information found in the manual is provided below.

Overview

Chapter 1, Introduction, introduces you to the KL3116 system. Its purpose, features and benefits are presented, and its front and back panel components are described.

Chapter 2, Installation, describes how to set up your installation. The necessary steps – from a basic single stage hookup to a complete daisy chained operation are provided.

Chapter 3, Basic Operation, explains the fundamental concepts involved in operating the KL3116.

Chapter 4, OSD Operation, provides a complete description of the KL3116's On Screen Display (OSD) and how to work with it.

Chapter 5, Hotkey Operation, details all of the concepts and procedures involved in the Hotkey operation of your KL3116 installation.

Chapter 6, Keyboard Emulation, provides tables that list the PC to Mac and PC to Sun keyboard emulation mappings.

Chapter 7, Firmware Upgrade, explains how to use this utility to upgrade the KL3116's firmware with the latest available versions.

An Appendix provides specifications and other technical information regarding the KL3116.

Conventions

This manual uses the following conventions:

Monospaced	Indicates text that you should key in.
[ ]	Indicates keys you should press. For example, [Enter] means to press the **Enter** key. If keys need to be chorded, they appear together in the same bracket with a plus sign between them: [Ctrl+Alt].
1.	Numbered lists represent procedures with sequential steps.
♦	Bullet lists provide information, but do not involve sequential steps.
→	Indicates selecting the option (on a menu or dialog box, for example), that comes next. For example, Start → Run means to open the *Start* menu, and then select *Run*.
⚠	Indicates critical information.

Product Information

For information about all ALTUSEN products and how they can help you connect without limits, visit ALTUSEN on the Web or contact an ALTUSEN Authorized Reseller. Visit ALTUSEN on the Web for a list of locations and telephone numbers:

International	http://www.aten.com
North America	http://www.aten-usa.com

This Page Intentionally Left Blank

Chapter 1
Introduction

Overview

The KL3116 Hideaway™ LCD KVMP Switch is an integrated LCD console and keyboard, video, and mouse (KVM) switch that offers secure access to 16 attached computers and mounts in only 1U of rack space. It features independently retractable 17" LCD monitor and keyboard with built-in touchpad. To maximize space in your data center the keyboard “hides away” when not in use, while the thin profile LCD monitor reclines flush against the rack to enable continuous monitoring of computers.

An extra console port is provided on the rear panel to manage the LCD KVM switch from an external console (monitor, USB keyboard, and USB mouse) up to 20 meters away. The KL3116 supports both PS/2 and USB keyboards and mice in the KVM Ports (CPU Ports). For added convenience it also supports an external PS/2 mouse. The KL3116 supports USB peripheral devices to be used with the attached computers.

A single KL3116 can control up to 16 computers. As many as 31 additional KH3116, KH0116, CS-1716, and ACS-1216A KVM switches can be daisy chained together, so that up to 512 computers can all be controlled from a single keyboard, monitor, and mouse console.

Your KL3116 investment is protected by an included *Firmware Upgrade Utility*. You can stay current with the latest functionality improvements by downloading firmware update files from our website as they become available, and using the utility to quickly and conveniently perform the upgrade.

Setup is fast and easy: plugging cables into their appropriate ports is all that is entailed. Because the KL3116 intercepts keyboard input directly, there is no software to configure, no need to get involved in complex installation routines, nor any need to be concerned with incompatibility problems.

Access to any computer connected to the installation is easily accomplished either by means of a powerful, mouse driven, On Screen Display (OSD) menu system, or by entering *Hotkey* combinations from the keyboard. A convenient *Auto Scan* feature also permits automatic scanning and monitoring of the activities of all computers running on the installation one by one.

Features

- Integrated KVM console with 17" LCD monitor in a *Hideaway*™ housing
- Space saving technology—up to two consoles (one bus) control up to 16 computers
- Extra console port—manage computers in the LCD KVM switch from an external console (monitor, USB keyboard, and USB mouse)
- Dual interface—supports PS/2 and USB keyboards and mice in the KVM Ports
- Supports external PS/2 mouse
- USB peripheral support for attached computers
- Conveniently located station and port selectors, each with two 7-segment LED displays to quickly switch to target computers
- Dedicated Hotkey Mode and OSD Invocation Keys reduce the number of keystrokes and provide quick access to these functions
- Convenient computer selection via mouse-driven, intuitive On Screen Display (OSD) menus and Hotkeys
- OSD tree structure makes finding and managing computers easy
- Dual slide—LCD monitor slides independently of the keyboard/touchpad
- Console lock—enables the console draw to remain securely locked away in position when not in use
- Daisy chain up to 31 additional KH3116, KH0116, CS-1716, and ACS-1216A KVM switches to control up to 512 computers
- No software required
- Hot pluggable—add or remove computers without powering down the switch
- OSD port list automatically expands when new stations are added
- Auto Scan Mode enables continuous monitoring of user-selected computers
- Security—Administrator/User password authorization for enhanced security protection; Administrator access rights synchronized between master and slave stations
- Two level password security—only authorized users can view and control computers
- Supports one Administrator and four User accounts with separate profiles

- Broadcast support—commands from the keyboard can be broadcast to all available computers on the installation
- OSD screen automatically adjusts to resolution changes
- Two types of logout: manual and timed
- Supports Windows, Sun, Linux, Mac, Unix, Netware, AIX (RS6000), and DOS 6.2 and later
- *Hideaway*™ housing is slightly less than 1U with top and bottom clearance for smooth operation in 1U of rack space
- DDC emulation—video settings of each computer are automatically adjusted for optimal output to the monitor
- Standard 105-key keyboard
- Keyboard status restored when switching computers
- Keyboard and mouse emulation (PS/2 and USB) for smooth switching and simultaneous booting of multiple computers even when the console focus is elsewhere
- LCD monitor reclines further to a 10 degree angle
- Superior video quality—supports resolutions up to 1280 x 1024 @ 75Hz
- Upgradable firmware—simultaneously upgrade the firmware for all KVM switches on the chain via the chaining bus

System Requirements

Computers

The following equipment must be installed on each computer:

- A VGA, SVGA, XGA, or MultiSync video graphics card with an HDB-15 port

> **Note:** The integrated LCD monitor's maximum resolution is 1280 x 1024 @ 75Hz. Ensure that none of the computer resolution settings exceed the LCD monitor's maximum resolution.

- PS/2 mouse and keyboard ports (6-pin mini-DIN), or at least one USB port

Cables

Three custom cable sets are provided with this package: one console cable set for consoles with USB ports, one 2L-5702P KVM cable set for computers with PS/2 ports, and one 2L-5202U KVM cable set for computers with USB ports. Use ATEN's high-quality, custom cables to ensure reliable switching among computers and daisy chained switches. To purchase ATEN's custom cables contact your dealer.

Function	Part Number
KVM Switch to PS/2 Connectors	2L-5702P - 1.8m
	2L-5201P - 1.2m 2L-5202P - 1.8m 2L-5203P - 3m 2L-5206P - 6m
KVM Switch to USB Connectors	2L-5201U - 1.2m 2L-5202U - 1.8m 2L-5203U - 3m 2L-5205U - 5m
Daisy Chaining	2L-1700 - 0.6m 2L-1701 - 1.8m

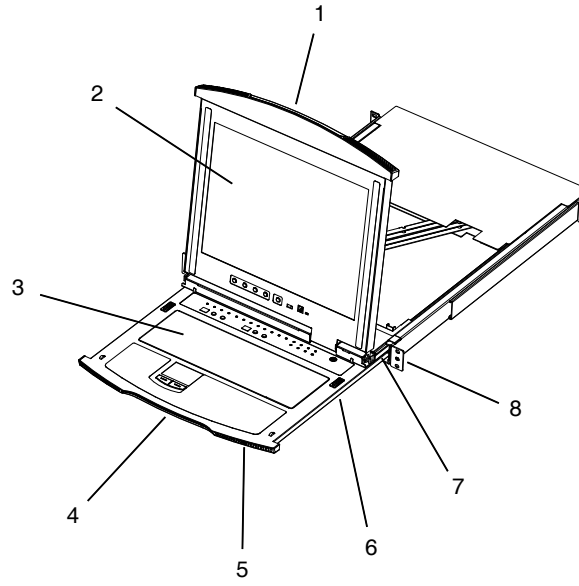
Note: We strongly recommend that you use 2L-5702P KVM cable sets for computers with PS/2 ports. You may use other cables; however, the keyboard and/or mouse will not work unless all connectors (keyboard, video, and mouse) are plugged into the ports on the computer before turning it on. The 2L-5702P cables do not have this limitation.

Operating Systems

- Microsoft® Windows® 2000 and higher
- Mac OS® 8.6 and higher
- RED HAT® Linux® 6.0, 7.1, 7.2, 7.3, 8.0 and higher
- Mandriva Linux 9.0 and higher
- SUSE 8.2 and higher
- FreeBSD 3.5.1, 4.2, 4.3, 4.5 and higher
- Sun Solaris™ 8 and higher
- Netware 5.0, 6.0 and higher
- OS/2
- AIX 4 and higher
- DOS 6.2 and higher

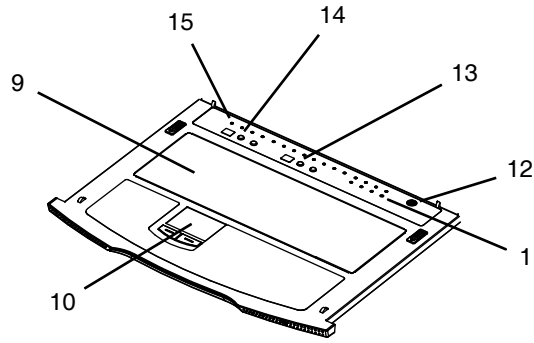
Components

Front View



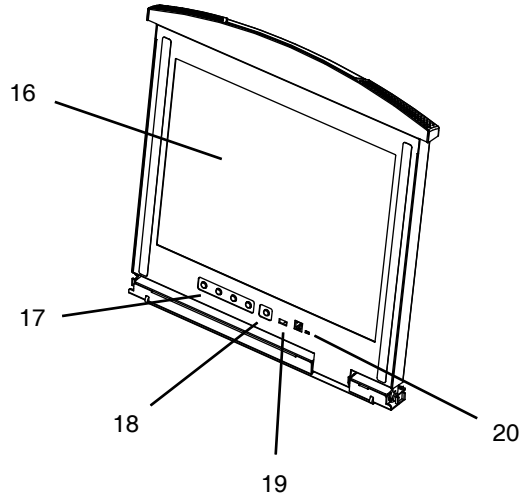
No.	Component	Description
1	Upper Handle	Pull to slide the LCD module out; push to slide the module in. See item 7 in this table and page 19 for more details on sliding the console in and out.
2	LCD Module	See *LCD Module*, page 8.
3	Keyboard Module	See *Keyboard Module*, page 7.
4	Lower Handle	Pull to slide the keyboard/touchpad module out. See item 1 in this table and page 19 for more details on sliding the console in and out.
5	Power LED	Lights (blue) to indicate that the unit is receiving power.
6	Keyboard Release Catch	These catches (one on each side) release the keyboard/ touchpad module so you can slide it away.
7	LCD Release Catch	These catches (one on each side) release the LCD module so you can slide it away.
8	Rack Mounting Tabs	The rack mounting tabs located at each corner of the unit secure the chassis to a system rack. See *Standard Rack Mounting*, page 12, for details.

Keyboard Module



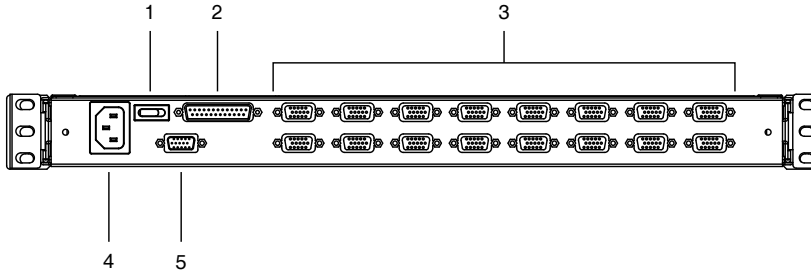
No.	Component	Description
9	Keyboard	Standard 105-key keyboard
10	Touchpad	Standard mouse touchpad
11	Lock LEDs & Reset Switch	The Num Lock, Caps Lock, Scroll Lock LEDs are located here. A Reset Switch is located just to the right of the Lock LEDs. Press this recessed switch in with a thin object to perform a system reset.
12	External Mouse Port	You can use this port to connect an external PS/2 mouse.
13	Station Selection Area	◆ The LED displays the station number that the port with the KVM focus is located on. ◆ The left button shifts the KVM focus down the chain (Station 2 → Station 1, etc.). After Station 1, it cycles back to the last station. ◆ The right button shifts the KVM focus up the chain. After the last station, it cycles to Station 1.
14	Port Selection Area	◆ The LED displays the port number of the computer that has the KVM focus. ◆ The left button shifts the KVM focus down a port (3 → 2, 2 → 1, etc.). After Port 1, it cycles back to the last port. ◆ The right button shifts the KVM focus up a port (2 → 3, 3 → 4, etc.). After the last port, it cycles to Port 1.
15	Port LEDs	An *On Line* LED lights (green) to indicate that the computer attached to its corresponding port is up and running.

LCD Module



No.	Component	Description
16	LCD Display	After sliding the LCD module out, flip up the cover to access the LCD monitor.
17	LCD Controls	Buttons to control the position and picture settings of the LCD display are located here. See page 25 for details.
18	LCD Power Button	Press this button to turn the LCD monitor on and off. When the LCD monitor is off, this button illuminates; when the LCD monitor is on, this button does not illuminate. (This function only affects the monitor, not the KVM switch itself.)
19	USB Port	This USB 1.1 port supports USB peripherals for computers connected to the local station. (We suggest that it be used primarily for Flash Disk sharing.) Only the computer receiving the KVM focus can access the device connected to the USB port.
20	Firmware Upgrade Section	**Firmware Upgrade Port:** The Firmware Upgrade Cable that transfers the firmware upgrade data from the administrator's computer to the KL3116 plugs into this RJ-11 connector. **Firmware Upgrade Switch:** During normal operation this switch should be in the NORMAL position. (See page 53 for firmware upgrading details.)

Rear View



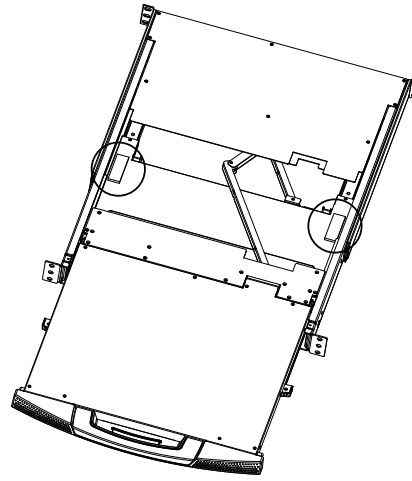
No.	Component	Description
1	Power Switch	This is a standard rocker switch that powers the unit On and Off.
2	Daisy Chain Port	When daisy chaining units, the cable plugs in here.
3	KVM Ports	The cables that link to the computers plug in here. **Note:** The shape of these 15-pin connectors has been specifically modified so that only custom KVM cables designed to work with this switch can plug in. (See *Cables*, page 4, for details.) Do **NOT** attempt to use ordinary 15-pin VGA connector cables to link these ports to the computers.
4	Power Socket	This is a standard 3-pin AC power socket. The power cord from an AC source plugs in here.
5	External Console Section	For flexibility and convenience, the KL3116 supports an external KVM console. A custom console cable set is provided to attach the external console's monitor, USB keyboard, and USB mouse.

This Page Intentionally Left Blank

Chapter 2
Installation

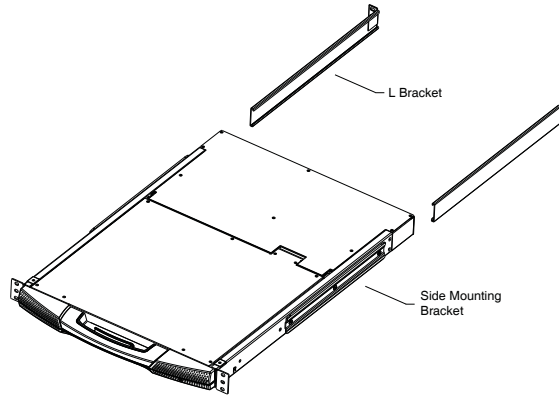
Before you Begin

1. Important safety information regarding the placement of this device is provided on page 59. Please review it before proceeding.
2. Make sure that power to all the devices you will be connecting up has been turned off. You must unplug the power cords of any computers that have the Keyboard Power On function.
3. Packing material has been inserted to protect the KL3116 during shipping. Slide the LCD module out until the packing material is visible. Remove the packing material, as shown in the diagram below, before installing the unit.



Standard Rack Mounting

A standard rack mounting kit is provided with your KL3116. The kit enables the switch to be mounted in rack with a depth of 42–77 cm.

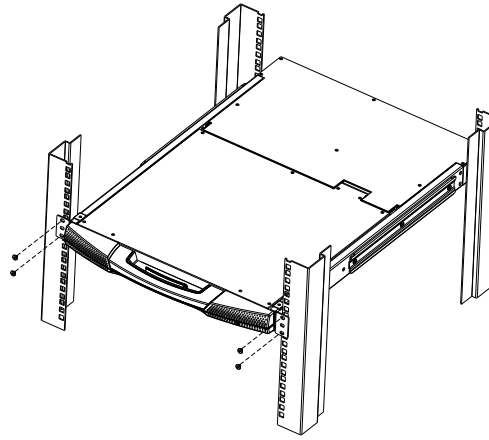


Note: 1. It takes two people to mount the switch: one to hold it in place, the other to screw it in.

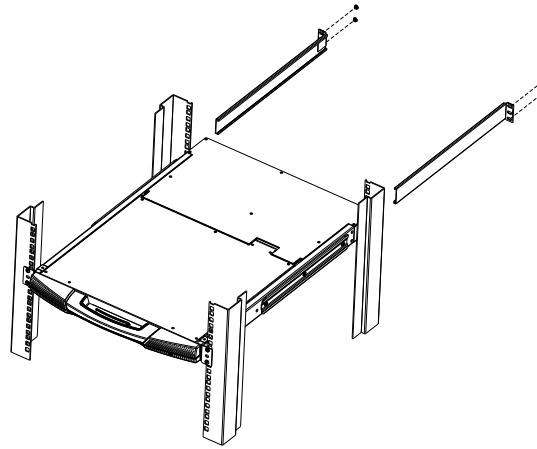
2. Cage nuts are provided for racks that are not prethreaded.
3. Optional mounting kits, including single person *Easy Installation* kits, are available with a separate purchase. See *Optional Rack Mounting*, page 66, for details.
4. Allow at least 5.1 cm on each side for proper ventilation, and at least 12.7 cm at the back for the power cord and cable clearance.

To rack mount the switch, do the following:

1. While one person positions the switch in the rack and holds it in place, the second person – using the screws provided with the rack mounting kit – loosely screws the front brackets to the rack.



2. While the first person still holds the switch in place, the second person slides the L brackets into the switch's side mounting brackets, from the rear until the bracket flanges contact the rack, then – using the screws provided with the rack mounting kit –screws the L brackets to the rack.



3. After the L brackets have been secured, tighten the front bracket screws.

Single Stage Installation

In a Single Stage installation, there are no additional switches daisy chained down from the first unit. To set up a single stage installation, refer to the installation diagrams beginning on page 15 (the numbers in the diagram correspond to the numbers of the installation steps) and do the following:

1. (*Optional*) Using the console cable set provided with this package, plug the custom SPHD connector into the Console Port on the rear panel of the switch. Connect the external console's monitor and USB keyboard and mouse to the appropriate connectors on the other end of the console cable.
2. Using a KVM cable set (as described in the *Cables* section on page 4), plug the custom SPHD connector into any available KVM Port on the switch.

   Note: Ignore the Daisy Chain Ports at this time. They are only used when daisy chaining additional KH3116, KH0116, CS-1716, or ACS-1216A units. Daisy chaining is described in the next section.

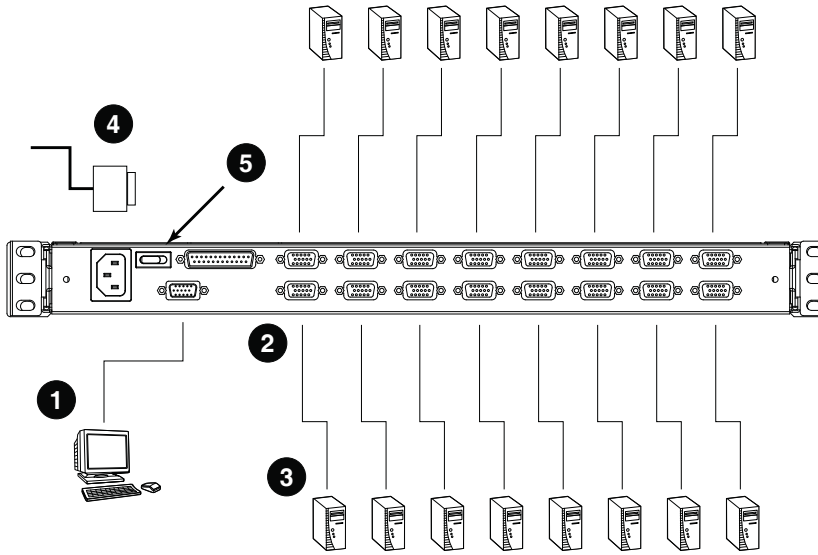
3. At the other end of the cable:

   a) For a USB connection (see page 16), plug the USB and video cables into their respective ports on the computer.

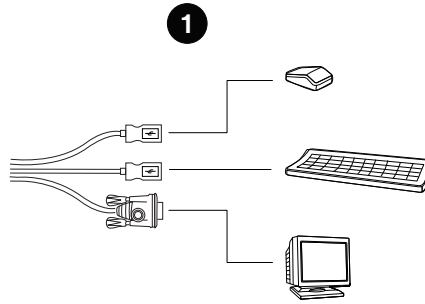
   b) For a PS/2 connection (see page 16), plug the keyboard, mouse and video cables into their respective ports on the computer.

   Repeat steps 2 and 3 for any additional computers you are installing.
4. Connect the power cord to the switch and to an AC power source appropriate for the KL3116.
5. Power on the switch.
6. After the switch is powered on, power on the computers.

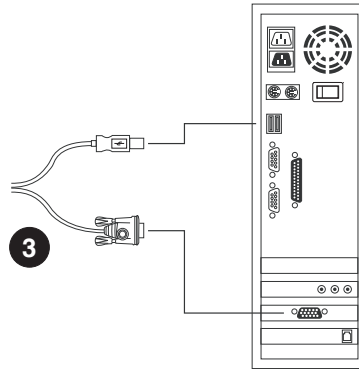
Single Stage Installation Diagram



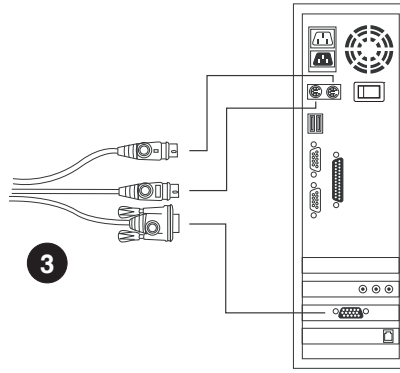
USB Console Connection



USB Cable Connection



PS/2 Cable Connection



Daisy Chaining

To control even more computers, up to 31 additional KH3116, KH0116, CS-1716, or ACS-1216A units can be daisy chained down from the KL3116. As many as 512 computers can be controlled from the unit's integrated *Hideaway*™ console in a complete installation.

A table showing the relation between the number of computers and the number of KH3116, KH0116, CS-1716, or ACS-1216A units needed to control them is provided on page 63 in the Appendix.

To set up a daisy chained installation, refer to the daisy chain installation diagram on page 18 and do the following:

1. Make sure that power to all the devices you will be connecting up has been turned off.
2. Use a daisy chain cable set (described in the *Cables* section, page 4), to connect the *Chain Out* port of the parent unit to the *Chain In* port of the child unit (First Station Out to Second Station In, Second Station Out to Third Station In, etc.).
3. Use KVM cable sets (described in the *Cables* section of the KH3116, KH0116, CS-1716, and ACS-1216A user manuals) to connect any available KVM Port on the daisy chained switch to the keyboard, video and mouse ports of the computers you are installing. Refer to Single Stage Installation for details.
4. Repeat the above steps for any additional KH3116, KH0116, CS-1716, and ACS-1216A units you wish to add to the chain.
5. Power up the installation according to the following procedure:

   a) Power on the First Station (KL3116).

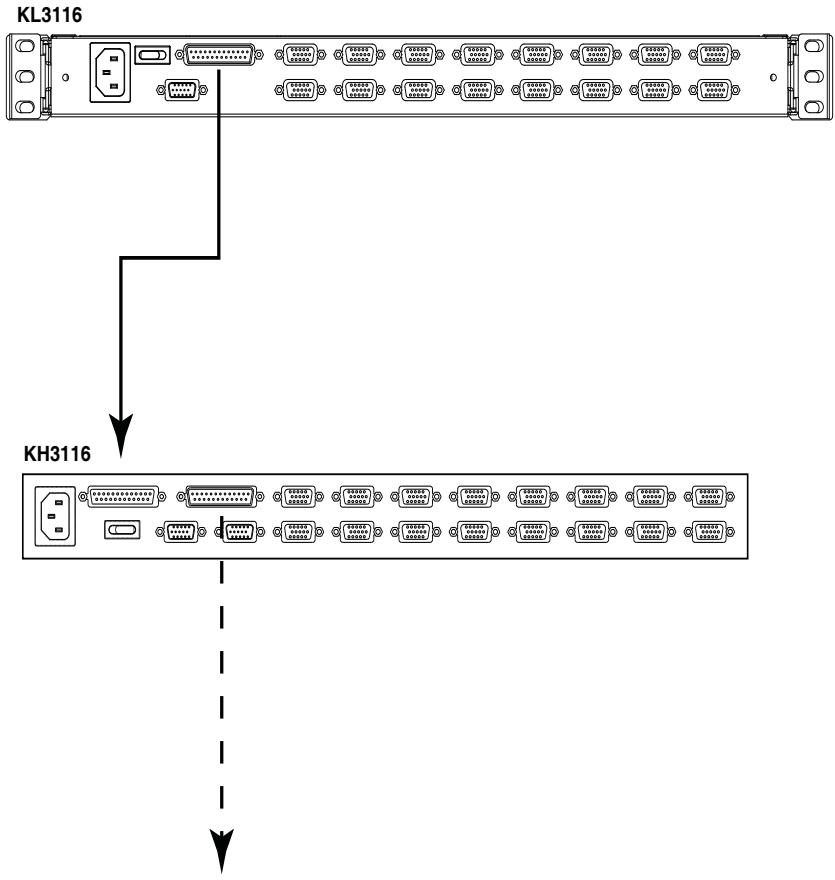
      Wait a few seconds for the unit to ascertain its Station ID.

   b) Power up each daisy chained Station on the installation in turn (Second Station, then Third Station, etc.). Each KH3116, KH0116, CS-1716, and ACS-1216A has an LED display on its front panel to indicate its Station ID (the Station ID for the First Stage unit (KL3116) is **01**, the ID for the Second Stage unit (the first KH3116, KH0116, CS-1716, or ACS-1216A) is **02**, the ID for the Third Stage unit is **03**, etc.).

      In each case, wait for the Station ID to be ascertained and displayed on the Station ID LED before plugging in the next Station.

   c) After all the Stations are up, power on the computers.

Daisy Chain Installation Diagram



Chapter 3
Basic Operation

Opening the Console

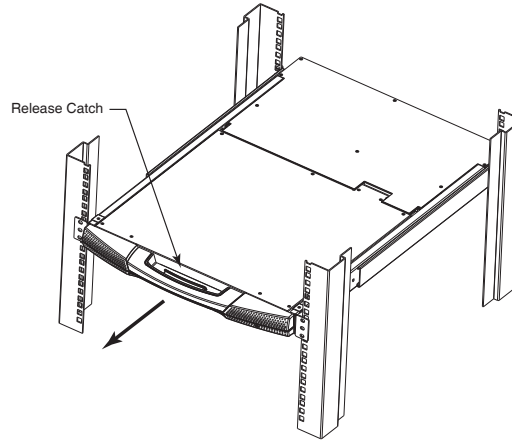
The KL3116's console consists of two modules: an LCD display module located under the top cover and a keyboard/touchpad module below the LCD module.

The modules can either slide together, or independently. This allows you to have the LCD display available for viewing while the keyboard / touchpad module is conveniently out of the way when not in use.

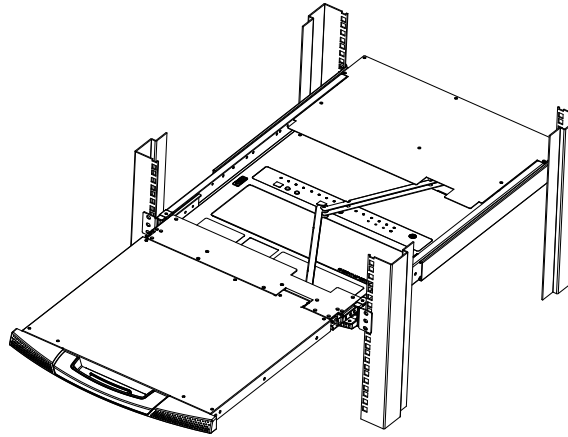
As a safety precaution, to keep the console from accidentally sliding out, it is locked into the *In* position. Before you can pull it out, you must pull the release catch.

Opening Separately

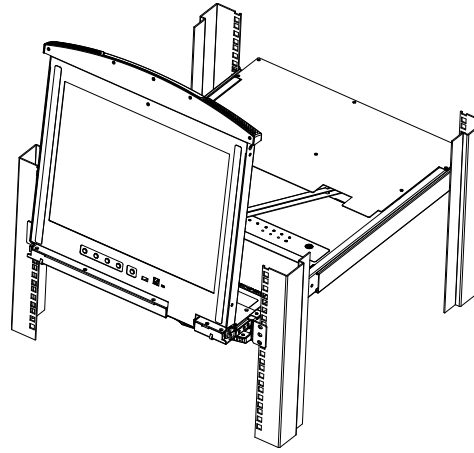
1. Pull the release catch to release the console, and pull the top panel a few centimeters toward you. Once the console has been released, you can let go of the catch.



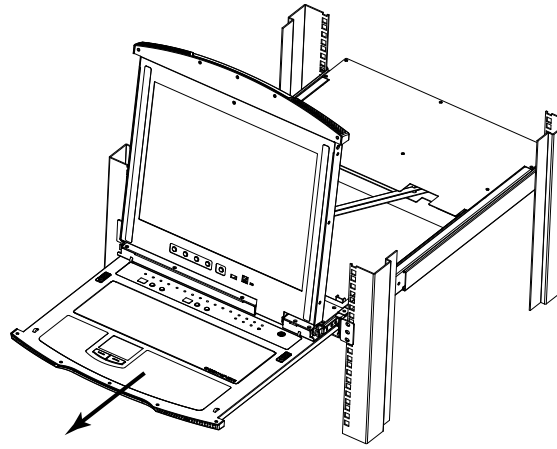
2. Pull the top panel all the way out until it clicks into place.



3. Rotate the top panel all the way up to expose the LCD screen.



4. Reach underneath and pull the keyboard module all the way out until it clicks into place.



Opening Together

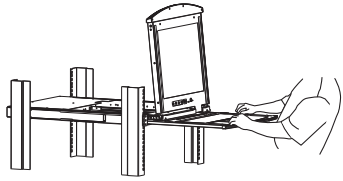
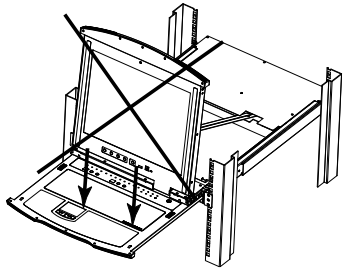
Refer to the diagrams in the *Opening Separately* section as you do the following:

1. Pull the release catch and pull the top and bottom panels out until the keyboard module clicks into place. Once the console has been released, you can let go of the release catch.
2. Pull the top panel the rest of the way out until it clicks into place.
3. Rotate the top panel all the way back to expose the LCD screen.

Note: Refer to the warning regarding placing excessive weight on the keyboard module on the following page.

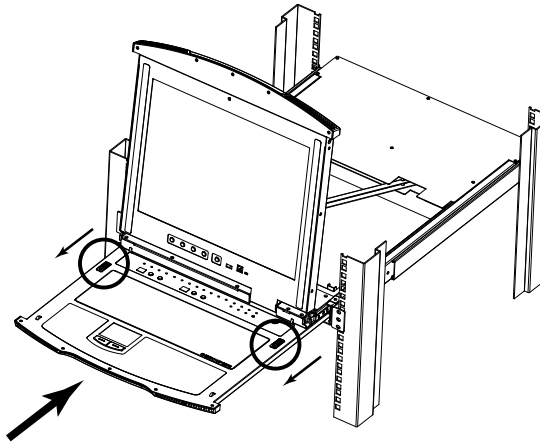
Operating Precautions

The maximum load bearing capacity of the keyboard module is 30kg. Failure to heed the information below can result in damage to the keyboard module.

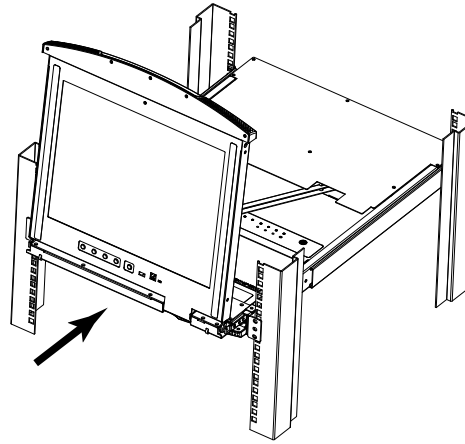
	RIGHT Rest your hands and arms lightly on the keyboard module as you work.
	WRONG! ◆ **DO NOT** lean your body weight on the keyboard module. ◆ **DO NOT** place heavy objects on the keyboard module.

Closing the Console

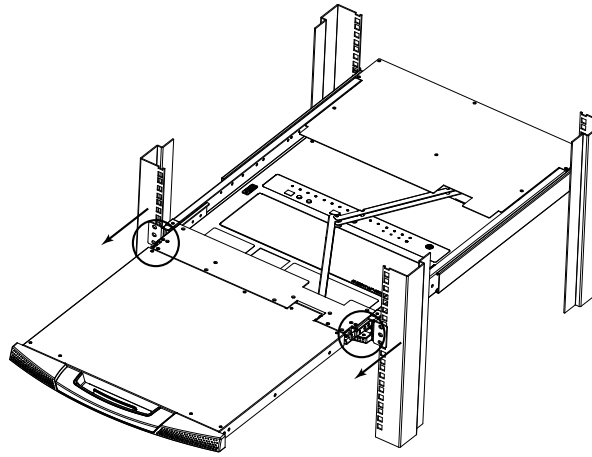
1. Pull the release catches located on either side of the keyboard toward you to release the keyboard module, then slide the module slightly in.



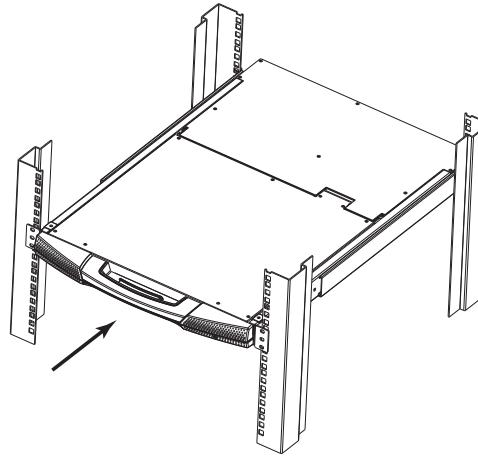
2. Let go of the catches. Using the front handle, push the keyboard module all the way in.



3. Rotate the LCD module all the way down, then pull the rear catches to release the LCD module.



4. Using the front handle, push the module all the way in.



LCD OSD Configuration

The LCD Buttons

The LCD OSD allows you to set up and configure the LCD display. Four buttons are used to perform the configuration, as described in the table below:

Button	Function
MENU	When you have not entered the LCD OSD Menu function, pressing this button invokes the Menu function and brings up the Main Menu.
▶|▲	When navigating through the menus, this button moves you right or up. When making an adjustment, it increases the value.
◀|▼	When navigating through the menus, this button moves you left or down. When making an adjustment, it decreases the value.
EXIT	◆ When you have not entered the LCD OSD Menu function, pressing this button performs an auto adjustment. An auto adjustment automatically configures all the settings for the LCD panel to what the OSD considers their optimum values to be. ◆ When you have entered the LCD OSD Menu function, pressing this button exits the current menu and returns you to the previous menu. Use it to leave an adjustment menu when you are satisfied with the adjustment you have made. ◆ When you are at the Main Menu, pressing this button exits the LCD OSD.

LCD Adjustment Settings

An explanation of the LCD OSD adjustment settings is given in the table below:

Setting	Explanation
Brightness	Adjusts the background black level of the screen image.
Contrast	Adjusts the foreground white level of the screen image.
Phase	If pixel jitter or horizontal line noise is visible on the display, your LCD may have the wrong phase setting. Adjust the phase setting to eliminate these problems.
Clock	If vertical banding is visible on the display, your LCD may have the wrong clock setting. Adjust the clock setting to eliminate vertical banding.
H-Position	Positions the display area on the LCD panel horizontally (moves the display area left or right).
V-Position	Positions the display area on the LCD panel vertically (moves the display area up or down).
Color Temperature	Adjusts the color quality of the display. You can adjust the "warmth" value, color balance, etc. The *Adjust Color* selection has a further submenu that lets you fine tune the RGB values.
Language	Selects the language that the OSD displays its menus in.
OSD Duration	Lets you set the amount of time that the OSD displays on the screen. If there is no input for the amount of time you choose, the OSD display turns off.
Reset	Resets the menu and submenu adjustments (except for language settings) to the original factory default settings.

Hot Plugging

The KL3116 supports *hot plugging*—components can be removed and added back into the installation by unplugging their cables from the ports without the need to shut the unit down. In order for hot plugging to work properly, however, the procedures described below must be followed:

Switching Station Positions

You can switch station positions by simply unplugging from the old parent and plugging into a new one. After you do, in order for the OSD menus to correspond to the change, you must reset the Station IDs in the OSD. See *RESET STATION IDS*, page 38, for details.

Hot Plugging KVM Ports

In order for the OSD menus to correspond to the change, you must manually reconfigure the OSD to reflect the new Port information. See the *F3 SET* (page 34) and *F4 ADM* (page 36), functions for details.

Note: If the computer's Operating System does not support hot plugging, this function may not work properly.

Powering Off and Restarting

If it becomes necessary to Power Off one of the units, unplug its power cable from the rear panel.

Before starting it back up you must do the following:

1. Shut down all the computers that are attached to it.

   Note: You must unplug the power cords of any computers that have the *Keyboard Power On* function. Otherwise, the switch will still receive power from the computers.

2. Wait 10 seconds, then plug the Station back in.
3. After the Station is up, Power On the computers.

Note: If you have shut down more than one Station, power up the highest Station first and work your way down to the lowest one.

Port Selection

The KL3116 provides three port selection methods to access the computers on the installation: Manual Port Switching, OSD Port Switching, and Hotkey Port Switching.

- For manual port switching, use the station selection and port selection buttons on the keyboard module to manually switch to a port. Refer to page 7 for details.
- OSD port switching is described in the next chapter.
- Hotkey port switching is described in Chapter 5.

Port ID Numbering

Each KVM Port on a KL3116 installation is assigned a unique Port ID. The Port ID is made up of two parts: a *Station Number*, and a *Port Number*:

- The *Station Number:* is a two digit number which reflects the switch's position in the daisy chain sequence.

Note: 1. The first station KL3116 has a Station Number of 01. The first daisy chained switch has a Station Number of 02, the next daisy chained switch has a Station Number of 03, etc.

2. The daisy chained KH3116, KH0116, CS-1716, and ACS-1216A have front panel LEDs that display their Station IDs.

- The *Port Number:* is a two digit number which reflects the port on the Station that the computer is connected to.
- The Station Number precedes the Port Number.
- Station and Port numbers from 1–9 are padded with a preceding zero, so they become 01–09.

For example, a computer attached to **Port 6** of **Station 12** would have a Port ID of: **12-06.**

Chapter 4
OSD Operation

OSD Overview

The on-screen display (OSD) is a menu driven method to handle computer control and switching operations. All procedures start from the OSD main screen.

There are two ways to invoke the OSD:

1. Tap the OSD invocation key on the keyboard (see *OSD HOTKEY,* page 34), or
2. Tap the **[Scroll Lock]** key twice.

Note: 1. Tapping the keyboard OSD invocation key when the OSD is visible, dismisses the OSD.

2. Scroll Lock] is the default OSD hotkey. You can optionally change the OSD Hotkey to the Ctrl key or the Alt Key (see *OSD HOTKEY*, page 34), in which case you would press **[Ctrl]** or **[Alt]** twice. If you choose this method, you must press the same [Ctrl] or [Alt] key both times.

Logging In

The OSD incorporates a two level (administrator / user) authorization procedure. Before the OSD main screen comes up, a login dialog box appears requesting a username and password.

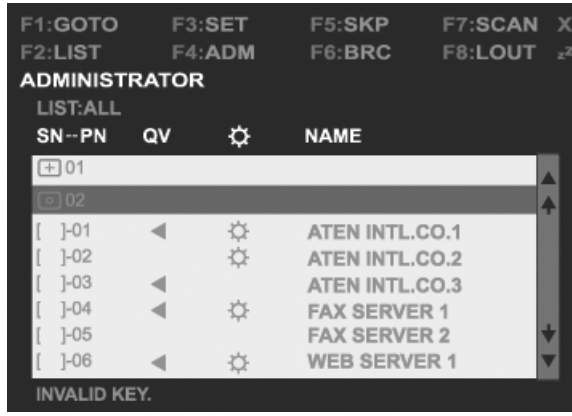
If this is a first time log in, or if the password function has not been set, simply press **[Enter]**. The OSD main screen displays in administrator mode. In this mode, you have administrator privileges, with access to all administrator and user functions, and can set up operations (including password authorization) as you like.

If the password function has been set, you must provide a valid username and password in order to access the OSD.

access to all Administrator and User functions, and can set up operations (including password authorization for the future), as you would like.

OSD Main Screen

When you invoke the OSD, a screen similar to the one below appears:



- The diagram depicts the Administrator's Main Screen. The User Main Screen does not show the **F4** and **F6** functions, since these are reserved for the Administrator and can't be accessed by ordinary Users.
- The OSD always starts in List view with the highlight bar at the same position it was in the last time it was closed.
- Only the ports that have been set accessible by the Administrator for the currently logged in User are visible (see *SET ACCESSIBLE PORTS* page 38, for details).
- If the port list is collapsed, click on a switch number, or move the highlight bar to it then press the right arrow key to expand the list. Similarly, to collapse a switch’s port list, click on the switch number, or move the highlight bar to it then press the left arrow key to collapse the list.

OSD Main Screen Headings

Heading	Explanation
SN-PN	This column lists the Port ID numbers (Station Number-Port Number) for all the KVM Ports on the installation. The simplest method to access a particular computer is to click it, or move the Highlight Bar to it, and then press [Enter].
QV	If a port has been selected for Quick View scanning (see *SET QUICK VIEW PORTS*, page 38), an arrowhead displays in this column to indicate so.
☼	The computers that are powered on and are On Line have a sun symbol in this column to indicate so.
NAME	If a port has been given a name (see *EDIT PORT NAMES*, page 37), its name appears in this column.

OSD Navigation

- To dismiss the menu, and deactivate the OSD, Click the **X** at the upper right corner of the OSD Window or press **Esc**.
- To Logout click **F8** or the $_{Z}Z^{Z}$ symbol at the top of the Main Screen, or press [F8].
- To move up or down through the list one line at a time, Click the Up and Down Triangle symbols (▲▼) or use the Up and Down Arrow Keys. If there are more list entries than there is room for on the Main Screen, the screen will scroll.
- To move up or down through the list one screen at a time, Click the Up and Down Arrow symbols (🡅🡇), or use the [Pg Up] and [Pg Dn] keys. If there are more list entries than there is room for on the Main Screen, the screen will scroll.
- To bring the KVM focus to a port, double-click it, or move the Highlight Bar to it and then press [Enter].
- After executing any action, you automatically go back to the menu one level above.

OSD Functions

OSD functions are used to configure and control the OSD. For example, you can rapidly switch to any port, scan selected ports only, limit the list you wish to view, designate a port as a Quick View Port, create or edit a port name, or make OSD setting adjustments.

To access an OSD function:

1. Either Click a Function Key field at the top of the Main Screen, or press a Function Key on the keyboard.
2. In the Submenus that appear make your choice either by Double Clicking it, or moving the Highlight Bar to it, and then pressing [Enter].
3. Press [Esc] to return to the previous menu level.

F1 GOTO

GOTO allows you to switch directly to a port either by keying in the port's *Name* or its *Port ID*.

- To use the Name method, key in **1**, key in the port's Name, and then press [Enter].
- To use the Port ID method, key in **2**, key in the *Port ID*, and then press [Enter].

Note: You can key in a partial Name or Port ID. In that case, the screen will show all the computers that the User has *View* rights to (see *SET ACCESSIBLE PORTS*, page 38), that match the Name or Port ID pattern, regardless of the current *List* settings (see *F2 LIST*, page 33, for details).

To return to the OSD Main Menu without making a choice, press [Esc].

F2 LIST

This function lets you broaden or narrow the scope of which ports the OSD displays on the Main Screen. Many of the OSD functions only operate on the computers currently selected for listing on the main screen with this function. The submenu choices and their meanings are given in the table below:

Choice	Meaning
ALL	Lists all of the ports on the installation.
QUICK VIEW	Lists only the ports that have been selected as Quick View Ports (see *SET QUICK VIEW PORTS*, page 38).
POWERED ON	Lists only the ports that have their attached computers Powered On.
QUICK VIEW + POWERED ON	Lists only the ports that have been selected as Quick View Ports (see *SET QUICK VIEW PORTS*, page 38), and that have their attached computers Powered On.

Double click the choice you want, or move the highlight bar to it, then press **[Enter]**. An icon appears before the choice to indicate that it is the currently selected one.

F3 SET

This function allows the Administrator and each User to set up an individual working environment. A separate profile for each is stored by the OSD and is activated according to the Username provided during Login.

To change a setting:

1. Double-click it; or move the highlight bar to it, then press [Enter].
2. After you select an item, a submenu with further choices appears. To make a selection, either Double Click it; or move the Highlight Bar to it, then press [Enter]. An icon appears before the selected choice to indicate which one it is. The settings are explained in the following table:

Setting	Function
OSD HOTKEY	Selects which Hotkey activates the OSD function: [Scroll Lock] [Scroll Lock], [Ctrl] [Ctrl], or [Alt] [Alt]. Since the Ctrl key combination may conflict with programs running on the computers, the default is the Scroll Lock combination.
PORT ID DISPLAY POSITION	Allows you to position where the Port ID appears on the monitor. The default is the upper left corner, but you can choose to have it appear anywhere on the screen. Use the Mouse or the Arrow Keys plus Pg Up, Pg Dn, Home, End, and 5 (on the numeric keypad with Num Lock off), to position the Port ID display, then Click or press [Enter] to lock the position and return to the Set submenu.
PORT ID DISPLAY DURATION	Determines how long a Port ID displays on the monitor after a port change has taken place. The choices are: **User Defined**—which lets you select the amount of time (from 1–255 sec.); and **Always On**—which displays the Port ID at all times. If you select User Defined, key in the number of seconds, then press [Enter]. The default is 3 Seconds. A setting of 0 (zero) disables this function.

Setting	Function
PORT ID DISPLAY MODE	Selects how the Port ID is displayed: the Port Number alone (**PORT NUMBER**); the Port Name alone (**PORT NAME**); or the Port Number plus the Port Name (**PORT NUMBER + PORT NAME**). The default is PORT NUMBER + PORT NAME).
SCAN DURATION	Determines how long the focus dwells on each port as it cycles through the selected ports in Auto Scan Mode (see *F7 SCAN*, page 42). Key in a value from 1–255 seconds, then press [Enter]. Default is 5 seconds; a setting of 0 disables the Scan function.
SCAN/SKIP MODE	Selects which computers will be accessed under Skip Mode (see *F5 SKP*, page 40), and Auto Scan Mode (see *F7 SCAN*, page 42). Choices are: **ALL**—All the Ports which have been set Accessible (see *SET ACCESSIBLE PORTS*, page 38); **QUICK VIEW**—Only those Ports which have been set Accessible and have been selected as Quick View Ports (see *SET QUICK VIEW PORTS*, page 38); **POWERED ON**—Only those Ports which have been set Accessible and are Powered On; **QUICK VIEW + POWERED ON**—Only those Ports which have been set Accessible and have been selected as Quick View Ports and are Powered On. The default is ALL.
SCREEN BLANKER	If there is no input from the console for the amount of time set with this function, the screen is blanked. Key in a value from 1–30 minutes, then press [Enter]. A setting of 0 disables this function. The default is 0 (disabled).
HOTKEY COMMAND MODE	Enables / Disables the Hotkey Command function in case a conflict with programs running on the computers occurs.
HOTKEY	Switches Hotkey invocation keys from the default [NUM LOCK] + [-] to [CTRL] + [F12].

F4 ADM

F4 is an Administrator only function. It allows the Administrator to configure and control the overall operation of the OSD. To change a setting Double Click it; or use the Up and Down Arrow Keys to move the highlight bar to it, then press [Enter].

After you select an item, a submenu with further choices appears. Double Click the choice you want, or move the Highlight Bar to it, then press [Enter]. An icon appears before the selected choice so that you know which one it is. The settings are explained in the following table:

Setting	Function
SET USERNAME AND PASSWORD	This function is used to set Usernames and Passwords for the Administrator and Users: 1. One Administrator and four User passwords can be set. 2. After you select the Administrator field or one of the User fields, a screen that allows you to key in your Username and Password appears. The Username and Password may be up to 15 characters long, and can consist of any combination of letters and numbers (A–Z, 0–9). 3. For each individual, key in the Username and Password, then press [Enter]. 4. To modify or delete a previous Username and/or Password, use the backspace key to erase individual letters or numbers.
SET LOGOUT TIMEOUT	If there is no input from the console for the amount of time set with this function, the Operator is automatically logged out. A login is necessary before the console can be used again. This enables other Operators to gain access to the computers when the original Operator is no longer accessing them, but has forgotten to log out. To set the timeout value, key in a number from 1–180 minutes, then press [Enter]. If the number is 0 (zero), this function is disabled. Default is 0 (disabled).

Setting	Function
EDIT PORT NAMES	To help remember which computer is attached to a particular port, every port can be given a name. This function allows the Administrator to create, modify, or delete port names. To Edit a port name: 1. Click the port you want, or use the Navigation Keys to move the highlight bar to it, then press [Enter]. 2. Key in the new Port Name, or modify/delete the old one. The maximum number of characters allowed for the Port Name is 12. Legal characters include: ◆ All alpha characters: **A–Z*** ◆ All numeric characters: **0–9** ◆ **+ - / : .** and **Space** *Case does not matter; the OSD displays the Port Name in all capitals no matter how they were keyed in. 3. When you have finished editing, press [Enter] to have the change take effect. To abort the change, press Esc.
RESTORE DEFAULT VALUES	This function is used to undo all changes and return the setup to the original factory default settings (see *OSD Factory Default Settings*, page 64)—except for the *Names* settings that were assigned to the Ports, which are saved.
CLEAR THE NAME LIST	This function clears the port name list.
ACTIVATE BEEPER	Choices are **Y** (for Yes), or **N** (for No). When activated, the beeper sounds whenever a Port is changed, when activating the Auto Scan function (see *F7 SCAN*, page 42), or an invalid entry is made on an OSD menu. The default is Y (activated).

(continues on next page)

(F4 ADM *continued*)

Setting	Function
SET QUICK VIEW PORTS	This function lets the Administrator select which Ports to include as Quick View ports. ◆ To select/deselect a port as a Quick View Port, use the Navigation Keys to move the highlight bar to it, then press the [Spacebar]. ◆ When a port has been selected as a Quick View Port, an arrowhead displays in the QV column of the LIST on the Main Screen to indicate so. When a port is deselected, the arrowhead disappears. ◆ If one of the Quick View options is chosen for the LIST view (see *F2 LIST*, page 33), only a Port that has been selected here will display on the List. ◆ If one of the Quick View options is chosen for Auto Scanning (see *SCAN/SKIP MODE*, page 35), only a Port that has been selected here will be Auto Scanned. The default is for no ports to be selected.
SET ACCESSIBLE PORTS	This function allows the Administrator to define User access to the computers on the installation on a Port-by-Port basis. For each User, select the target Port, then press the [Spacebar] to cycle through the choices: **F** (Full access), **V** (View Only), or blank. Repeat until all access rights have been set, then press [Esc]. The default is **F** for all users on all Ports. **Note:** A blank setting means that no access rights are granted. The Port will not show up on the User's LIST on the Main Screen.
RESET STATION IDS	If you change the position of one of the Stations in the daisy chain, the OSD settings will no longer correspond to the new situation. This function directs the OSD to rescan the Station positions of the entire installation and updates the OSD so that the OSD Station information corresponds to the new physical layout. **Note:** Only the Station Numbers get updated. Except for the Port Names, all Administrator settings (such as Set Accessible Ports, Set Quick View Ports, etc.), for all of the computers affected by the change, have to be manually redone.

Setting	Function
SET OPERATING SYSTEM	Specifies the operating platform of the computer attached to each port. For each port, press the [Spacebar] to cycle through the choices (Win, Mac, Sun*, and Other). Repeat until all the ports have been set, then press [Esc]. The default is Win.
FIRMWARE UPGRADE	In order to upgrade the KL3116's firmware (see page 53) you must first enable *Firmware Upgrade Mode* with this setting. When you bring up this menu, the current firmware version levels display. Select **Y** to enable Firmware Upgrade Mode, or **N** to leave this menu without enabling it.
KEYBOARD LANGUAGE	Sets the keyboard language layout for the computers attached to each port. You should select Auto (the default), which sets the keyboard language layout according to that of the computer. If selecting Auto does not properly configure the computer's keyboard language layout, choose the language of your keyboard layout from the list.
SET CONSOLE MODE	This setting selects which console(s) (internal/external) are enabled: **0** Both consoles enabled **1** LCD Console only **2** External console only Use the spacebar to cycle through the choices. The default is 0. Changes will not be saved until you logout.

***** If you are installing a Sun or Mac computer, before you run it for the first time you must set the correct operating system for the port it is connected to with this function; otherwise, it will not boot.

F5 SKP

This function enables you to easily skip backward or forward, switching the console focus from the currently active KVM Port to the previous or next available one.

- The selection of computers to be available for Skip Mode switching is made with the *Scan/Skip Mode* setting under the **F3 SET** function (see page 35).
- When you are in Skip Mode, press:

←	To skip from the current port to the previous port in the list.
→	To skip from the current port to the next port in the list.
↑	To skip from the current port to the last port of the previous station in the list.
↓	To skip from the current port to the first port of the next station in the list.

Note: When you Skip, you only Skip to the previous or next available computer that is in the *Scan/Skip Mode* selection (see page 35).

- If a Port has been selected for *Scan/Skip Mode*, when the focus switches to that port a Left/Right Triangle symbol appears before its Port ID Display to indicate so.
- While Skip Mode is in effect, the console will not function normally. You must exit Skip Mode in order to regain control of the console.
- To exit Skip Mode, press **[Spacebar]** or **[Esc]**.

F6 BRC

F6 is an Administrator only function. When this function is in effect, commands sent from the console are broadcast to all available computers on the installation.

This function is particularly useful for operations that need to be performed on multiple computers, such as performing a system wide shutdown, installing or upgrading software, etc.

BRC works in conjunction with the **F2 LIST** function. The LIST function (see page 33), is used to broaden or narrow the focus of which Ports appear on the OSD Main Screen. When you Broadcast a command, it is to the Ports currently displayed on the OSD Main Screen.

- While BRC Mode is in effect, a Speaker symbol appears before the Port ID Display of the port that currently has the console focus.
- While BRC Mode is in effect, the mouse will not function normally. You must exit BRC Mode in order to regain control of the mouse.

To exit BRC mode, invoke the OSD (with the OSD hotkey), then click the **F6** field, or press **[F6]**, to turn BRC mode off.

F7 SCAN

This function automatically switches among the available computers at regular intervals so that you can monitor their activity without having to take the trouble of switching manually.

- The selection of computers to be included for Auto Scanning is made with the *Scan/Skip Mode* setting under the **F3 SET** function (see page 35).
- The amount of time that the focus stays on each port is set with the *Scan Duration* setting under the **F3 SET** function (see page 35).
- As each computer is accessed, an **S** appears in front of the Port ID display to indicate that it is being accessed under *Auto Scan Mode*.
- While you are in Auto Scan Mode, you can pause the scanning in order to keep the focus on a particular computer either by pressing [**P**], or with a Left Click of the mouse. To resume scanning, press any key or left click again. See *Auto Scan Mode*, page 46, for details.
- To stop scanning and stay at a particular location, press the [Spacebar] or [Esc] to exit *Auto Scan Mode*. If the scanning stops on an empty port, or one where the computer is attached but is powered Off, the monitor screen will be blank, and the mouse and keyboard will have no effect. Simply wait—after the *Scan Duration* time is up, the Scan function will move on to the next port.

Note: While *Auto Scan* mode is in effect, the console will not function normally. You must exit *Auto Scan* mode in order to regain control of the console. To exit *Auto Scan* mode, press the **[Spacebar]** or **[Esc]**.

F8 LOUT

Clicking the **F8** field, or pressing [F8], logs you out of the OSD and blanks the Console screen. This is different from simply deactivating the OSD when you are at the Main Screen by pressing [Esc].

With this function you must log in all over again to regain access to the OSD, whereas with [Esc], all you have to do is tap the OSD Hotkey.

Note: 1. When you reenter the OSD after logging out, the screen stays blank except for the OSD Main Menu. You must input your password before you can continue.

2. If you reenter the OSD after logging out, and immediately use [Esc] to deactivate the OSD without having selected a port from the OSD menu, a Null Port message displays on the screen. The OSD Hotkey will bring up the Main OSD Screen.

Chapter 5
Hotkey Operation

Overview

For speed and convenience, the KL3116 provides a hotkey function that allows you to switch ports and make some configuration settings directly from the keyboard.

Hotkey port control allows you to provide KVM focus to a particular computer directly from the keyboard. The KL3116 provides the following hotkey port control features:

- Selecting the Active Port
- Auto Scan Mode Switching
- Skip Mode Switching

The following configuration settings can also be performed with the hotkey function:

- Setting the Hotkey Invocation Hotkey
- Setting the OSD Hotkey
- Setting the Port Operating System
- Performing a USB Reset
- Setting the Beeper

Note: The hotkey function must be enabled to use hotkey operations. See *HOTKEY COMMAND MODE*, page 35, for details.

Hotkey Port Access

Invoking Hotkey Mode

All Hotkey operations begin by invoking *Hotkey Mode*. Invoking Hotkey Mode takes the following three steps:

1. Hold down the **[Num Lock]** key
2. Press and release the **[Minus]** key
3. Release the **[Num Lock]** key

Note: 1. The minus key must be released within one half second, otherwise Hotkey invocation is cancelled and it has no effect.

2. In case the invocation key combination causes problems with other programs, there is an alternate combination. See *Alternate Hotkey Invocation Keys*, page 48 for details.

Exiting Hotkey Mode

Press **[Esc]** to exit *Hotkey* mode.

Hotkey Mode Operation

Hotkey Mode Characteristics

When Hotkey Mode is active:

- The Caps Lock and Scroll Lock LEDs flash in succession to indicate that hotkey mode is in effect. They stop flashing when you exit hotkey mode.
- A Command Line appears on the monitor screen. The command line prompt is the word *Hotkey:* in yellow text on a blue background. Hotkey information that you key in displays on the command line.
- Ordinary keyboard and mouse functions are suspended—only Hotkey compliant keystrokes and mouse clicks (described in the sections that follow) can be input. You must exit *Hotkey* mode in order to regain normal control of the console.
- At the conclusion of some hotkey operations, you automatically exit hotkey mode. With others, you must exit manually by pressing **[Esc]** or **[Spacebar]**.

Selecting the Active Port

Each KVM port is assigned a port ID (see *Port ID Numbering*, page 28). You can directly access any computer on the installation with a hotkey combination that specifies the Port ID of the KVM port that the computer is connected to. The steps involved are:

1. Invoke hotkey mode(see page 44).
2. Key in the computer's Port ID number.

   The Port ID numbers display on the Command Line as you key them in. If you make a mistake, use **[Backspace]** to erase the wrong number.
3. Press **[Enter]**.

   After you press [Enter], the KVM focus switches to the designated computer and you automatically exit hotkey mode.

Auto Scan Mode

The KL3116's Auto Scan feature automatically switches among all the active KVM Ports that have been designated as accessible under *Scan/Skip* Mode, so that their activity can be monitored automatically. See *SCAN/SKIP MODE*, page 35 for more information.

Invoking Auto Scan:

To start Auto Scanning, key in the following Hotkey combination:

1. Invoke hotkey mode (see page 44)
2. Press **[A]**

After you press **A**, you automatically exit Hotkey Mode, and enter Auto Scan Mode.

While *Auto Scan* mode is in effect, ordinary keyboard and mouse functions are suspended – only *Auto Scan* mode compliant keystrokes and mouse clicks can be input. You must exit *Auto Scan* mode in order to regain normal control of the console.

Pausing Auto Scan

While you are in *Auto Scan* mode, you can pause the scanning in order to keep the focus on a particular computer either by pressing **P** or with a left click of the mouse. During the time that auto scanning is paused, the command line displays: **Auto Scan**: **Paused**.

Pausing when you want to keep the focus on a particular computer is more convenient than exiting *Auto Scan* mode because when you resume scanning, you start from where you left off.

If you exit *Auto Scan* mode, on the other hand, when you restart scanning, you start over from the beginning with the very first computer on the installation.

To resume auto scanning after pausing, press any key or left click. Scanning continues from where it left off.

Exiting AutoScan Mode

To exit *Auto Scan* mode press [Esc] or [Spacebar]. Auto scanning stops when you exit *Auto Scan* mode.

Skip Mode

This feature allows you to switch between computers in order to monitor them manually. You can dwell on a particular port for as long or as little as you like—as opposed to Auto Scanning, which automatically switches after a fixed interval. To invoke Skip Mode, key in the following Hotkey combination:

1. Invoke hotkey mode (see page 44)
2. Key in **[Arrow]**
   - Where [Arrow] refers to one of the arrow keys. After you press an arrow, you automatically exit hotkey mode and enter *Skip* mode where you can switch ports as follows:

←	Skips to the first accessible port. (See *SCAN/SKIP MODE*, page 35, for information regarding accessible ports.)
→	Skips to the next accessible port.
↑	Skips to the last accessible port of the previous station.
↓	Skips to the first accessible port of the next station.

   - Once you are in Skip Mode, you can keep on skipping by pressing the arrow keys. You don't have to invoke hotkey mode again.
   - While Skip Mode is in effect, ordinary keyboard and mouse functions are suspended – only Skip Mode compliant keystrokes can be input. You must exit Skip Mode in order to regain normal control of the console.
3. To exit *Skip* mode, press **[Esc]** or **[Spacebar]**.

Hotkey Configuration

Alternate Hotkey Invocation Keys

An alternate set of Hotkey Invocation keys is provided in case the default set conflicts with programs running on the computers.

To switch to the alternate Hotkey Invocation set, do the following:

1. Invoke hotkey mode (see page 44)
2. Press and release the [H] key

The Hotkey Invocation keys become the Ctrl key (instead of Num Lock) and the F12 key (instead of Minus).

Note: This procedure is a toggle between the two methods. To revert back to the original [Num Lock] [Minus] method, invoke hotkey mode, then press and release the [H] key again.

Alternate OSD Invocation Keys

The OSD activation method can be changed from tapping the Scroll Lock key twice to tapping the Ctrl key twice ([Ctrl] [Ctrl]) or the Alt key twice ([Alt] [Alt]). To change the OSD Invocation method, do the following:

1. Invoke hotkey mode (see page 44)
2. Press and release the [T] key

Note: This procedure cycles among the three methods. To revert back to a previous method, invoke hotkey mode, then press and release the [T] key again. Repeat, if necessary.

Port OS Configuration

The KL3116's default port settings are for a PC Compatible operating platform. You can modify the platform setting for each port by first bringing the KVM focus to the port and then using the following hotkey combination

1. Invoke hotkey mode (see page 44)
2. Press and release the appropriate Function key, as shown in the following table:

Key	Operation
[F1]	Sets the Windows keyboard operating platform for the port that currently has the KVM focus.
[F2]	Sets the Mac keyboard operating platform for the port that currently has the KVM focus.
[F3]	Sets the Sun keyboard operating platform for the port that currently has the KVM focus.
[R] [Enter]	Reset everything to the default settings.

Note: The brackets indicate the keys you should press. Simply press the indicated keys – do not type the brackets.

After completing a setting, you automatically exit hotkey mode.

Miscellaneous Actions

Hotkeys are also used to reset the USB, and toggle the beeper On and Off. To perform any of these operations, do the following:

1. Invoke hotkey mode (see page 44)
2. Press and release the appropriate action key (see table).

Key	Operation
[F5]	Performs a USB reset
[B]	Toggles the Beeper On or Off. The Command Line displays *Beeper On* or *Beeper Off* for one second; then the message disappears and you automatically exit hotkey mode.

After completing a setting, you automatically exit hotkey mode.

Hotkey Summary Table

[Num Lock] + [-] [Port ID] [Enter] or [Ctrl] + [F12] [Port ID] [Enter]		Switches access to the computer that corresponds to that Port ID.
[Num Lock] + [-] [A] or [Ctrl] + [F12] [A]		Invokes Auto Scan Mode.
	[P]	When in Auto Scan Mode, it pauses Auto Scanning.
	Left-click	
	Any key	Resumes Auto Scanning after pausing.
	[Esc]	Exits Auto Scan Mode.
	[Spacebar]	
	Right-click	
[Num Lock] + [*] [Arrow] or [Num Lock] + [-] [Arrow]		Invokes Skip Mode and Switches computer access depending on which Arrow was pressed.
	[←]	Skips from the current port to the first accessible port previous to it.
	[→]	Skips from the current port to the next accessible port.
	[↑]	Skips from the current port to the last accessible port of the previous Station.
	[↓]	Skips from the current port to the first accessible port of the next Station.
	[Esc]	Exits Skip Mode.
	[Spacebar]	
[Num Lock] + [-] [H] or [Ctrl] + [F12] [H]		Changes the Hotkey Invocation keys from [Num Lock] + [-] to [Ctrl] + [F12] and vice versa.
[Num Lock] + [-] [T] or [Ctrl] + [F12] [T]		Cycles among the three choices for the OSD Hotkey. From [Scroll Lock] [Scroll Lock] to [Ctrl] [Ctrl] to [Alt] [Alt] and back to [Scroll Lock] [Scroll Lock]
[Num Lock] + [-] [F1] or [Ctrl] + [F12] [F1]		Sets the keyboard language layout of the port that has the KVM focus to Windows.
[Num Lock] + [-] [F2] or [Ctrl] + [F12] [F2]		Sets the keyboard language layout of the port that has the KVM focus to Mac.
[Num Lock] + [-] [F3] or [Ctrl] + [F12] [F3]		Sets the keyboard language layout of the port that has the KVM focus to Sun.
[Num Lock] + [-] [R] [Enter] or [Ctrl] + [F12] [R] [Enter]		Resets the switch to the default settings.
[Num Lock] + [-] [F5] or [Ctrl] + [F12] [F5]		Performs a USB reset.
[Num Lock] + [-] [B] or [Ctrl] + [F12] [B]		Toggles the Beeper On or Off.

Chapter 6
Keyboard Emulation

The PC compatible keyboard can emulate the functions of the Mac and Sun keyboard. The emulation mappings are listed in the tables that follow.

Mac Keyboard Emulation

PC Keyboard	Mac Keyboard
[Shift]	Shift
[Ctrl]	Ctrl
[Ctrl] [1]	
[Ctrl] [2]	
[Ctrl] [3]	
[Ctrl] [4]	
[Alt]	Alt
[Print Screen]	F13
[Scroll Lock]	F14
	=
[Enter]	Return
[Backspace]	Delete
[Insert]	Help
[Ctrl]	F15

Note: When using key combinations, press and release the first key [Ctrl], then press and release the activation key.

Sun Keyboard Emulation

PC Keyboard	Sun Keyboard
[Ctrl] [T]	Stop
[Ctrl] [F2]	Again
[Ctrl] [F3]	Props
[Ctrl] [F4]	Undo
[Ctrl] [F5]	Front
[Ctrl] [F6]	Copy
[Ctrl] [F7]	Open
[Ctrl] [F8]	Paste
[Ctrl] [F9]	Find
[Ctrl] [F10]	Cut
[Ctrl] [1]	
[Ctrl] [2]	
[Ctrl] [3]	
[Ctrl] [4]	
[Ctrl] [H]	Help
	Compose
	u

Note: 1. When using key combinations, press and release the first key [Ctrl**]**, then press and release the activation key.

2. If you need to go into OK Mode, which requires Stop + A, see *Troubleshooting*, p. 72.

Chapter 7
Firmware Upgrade

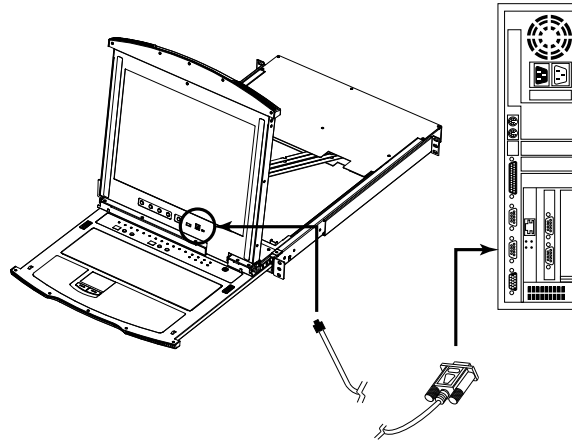
The Windows-based Firmware Upgrade Utility (FWUpgrade.exe) provides a smooth, automated process for upgrading the KVM switch's firmware.

The Utility comes as part of a Firmware Upgrade Package that is specific for each device. New firmware upgrade packages are posted on our web site as new firmware revisions become available. Check the web site regularly to find the latest packages and information relating to them.

Preparation

To prepare for the firmware upgrade, do the following:

1. From a computer that is not part of your KVM installation go to our Internet support site and choose the model name that relates to your device to get a list of available firmware upgrade packages.
2. Choose the firmware upgrade package you want to install (usually the most recent) and download it to your computer.
3. Use the *Firmware Upgrade Cable* (provided with this unit), to connect a COM port on your computer to the *Firmware Upgrade Port* of the switch.



4. Shut down the computers on your KL3116 installation.

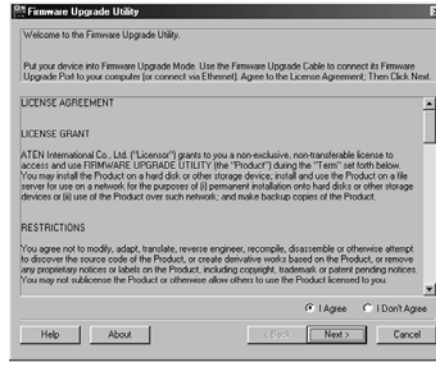
5. From your KVM switch console, bring up the OSD (see page 29) and select the **F4 ADM** function.
6. Scroll down to FIRMWARE UPGRADE (see page 39). Press **[Enter]**, then press **[Y]** to invoke Firmware Upgrade Mode. The current firmware upgrade version displays on the screen for your reference.

Starting the Upgrade

To upgrade your firmware:

1. Run the downloaded Firmware Upgrade Package file, either by double-clicking the file icon, or by opening a command line and entering the full path to it.

   The Firmware Upgrade Utility *Welcome* screen appears:

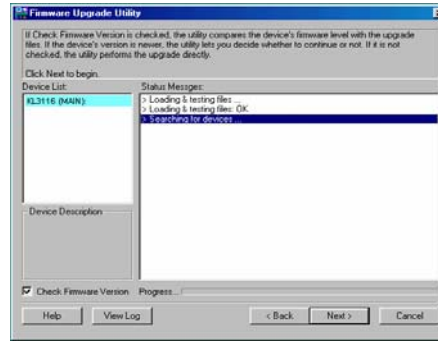

Firmware Upgrade Utility
Welcome to the Firmware Upgrade Utility.
Put your device into Firmware Upgrade Mode. Use the Firmware Upgrade Cable to connect its Firmware Upgrade Port to your computer (or connect via Ethernet). Agree to the License Agreement, Then Click Next.
LICENSE AGREEMENT
LICENSE GRANT
ATEN International Co., Ltd. ("Licensor") grants to you a non-exclusive, non-transferable license to access and use FIRMWARE UPGRADE UTILITY (the "Product") during the "Term" set forth below. You may install the Product on a hard disk or other storage device; install and use the Product on a file server for use on a network for the purposes of (i) permanent installation onto hard disks or other storage devices or (ii) use of the Product over such network; and make backup copies of the Product.
RESTRICTIONS
You agree not to modify, adapt, translate, reverse engineer, recompile, disassemble or otherwise attempt to discover the source code of the Product, or create derivative works based on the Product, or remove any proprietary notices or labels on the Product, including copyright, trademark or patent pending notices. You may not sublicense the Product or otherwise allow others to use the Product licensed to you.
I Agree
I Don't Agree
Help
About
< Back
Next >
Cancel

> **Note:** The screens shown in this chapter are for reference only. The wording and layout of the actual screens put up by the firmware upgrade utility may vary slightly from these examples.

2. Read and *Agree* to the License Agreement (enable the I Agree radio button).

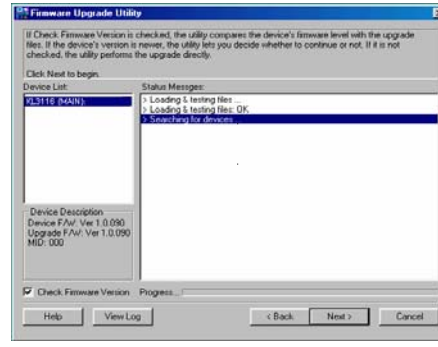
3. Click Next to continue.

   The Firmware Upgrade Utility main screen appears:


Firmware Upgrade Utility
If Check Firmware Version is checked, the utility compares the device's firmware level with the upgrade files. If the device's version is newer, the utility lets you decide whether to continue or not. If it is not checked, the utility performs the upgrade directly.
Click Next to begin.
Device List:
KL3116 (MAIN)
Status Messages:
> Loading & testing files ...
> Loading & testing files: OK
> Searching for devices ...
Device Description
Check Firmware Version
Progress
Help
View Log
< Back
Next >
Cancel

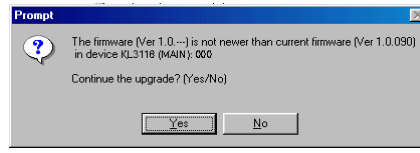
   The Utility inspects your installation. All the devices capable of being upgraded by the package are listed in the *Device List* panel.

   As you select a device in the list, its description appears in the *Device Description* panel.


Firmware Upgrade Utility
If Check Firmware Version is checked, the utility compares the device's firmware level with the upgrade files. If the device's version is newer, the utility lets you decide whether to continue or not. If it is not checked, the utility performs the upgrade directly.
Click Next to begin.
Device List:
KL3116 (MAIN)
Status Messages:
> Loading & testing files ...
> Loading & testing files: OK
> Searching for devices ...
Device Description
Device F/w: Ver 1.0.090
Upgrade F/w: Ver 1.0.090
MID: 000
Check Firmware Version
Progress
Help
View Log
< Back
Next >
Cancel

4. Click **Next** to perform the upgrade.

   If you enabled *Check Firmware Version*, the Utility compares the device's firmware level with that of the upgrade files. If it finds that the device's version is higher than the upgrade version, it brings up a dialog box informing you of the situation and gives you the option to continue or cancel the upgrade.

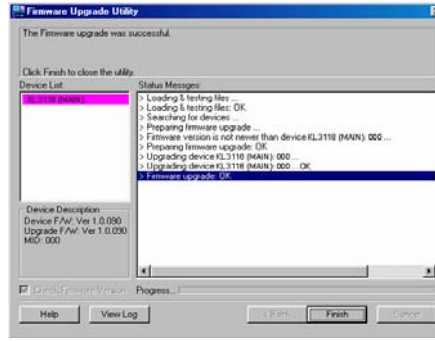

Prompt
The firmware (Ver 1.0 ---) is not newer than current firmware (Ver 1.0.090) in device KL3116 (MAIN): 000
Continue the upgrade? (Yes/No)
Yes
No

   If you didn't enable *Check Firmware Version*, the Utility installs the upgrade files without checking whether they are a higher level or not.

   As the Upgrade proceeds, status messages appear in the Status Messages panel and the progress toward completion is shown on the *Progress* bar.

Upgrade Succeeded

After the upgrade has completed, a screen appears to inform you that the procedure was successful:


Firmware Upgrade Utility
The Firmware upgrade was successful.
Click Finish to close the utility.
Device List
KL3116 (MAIN)
Status Messages
> Loading & testing files ...
> Loading & testing files: OK
> Searching for devices ...
> Preparing firmware upgrade ...
> Firmware version is not newer than device KL3116 (MAIN): 000 ...
> Preparing firmware upgrade: OK
> Upgrading device KL3116 (MAIN): 000 ...
> Upgrading device KL3116 (MAIN): 000 ... OK
> Firmware upgrade OK
Device Description
Device F/w: Ver 1.0.090
Upgrade F/w: Ver 1.0.090
MID: 000
Progress...
Help
View Log
Finish

Click **Finish** to close the Firmware Upgrade Utility.

Upgrade Failed

If the upgrade failed to complete successfully a dialog box appears asking if you want to retry. Click **Yes** to retry. If you Click **No**, the *Upgrade Failed* screen appears. Click **Cancel** to close the Firmware Upgrade Utility. See the next section, *Firmware Upgrade Recovery*, for how to proceed.

Firmware Upgrade Recovery

There are basically two conditions that call for firmware upgrade recovery:

- When you begin a firmware upgrade, but decide not to proceed with it.
- When the Mainboard firmware upgrade fails.

Note: If one of the cascaded switches fails to upgrade successfully, unplug it from the installation and perform the recovery and upgrade operation independently. After it has been successfully upgraded, plug it back into the installation.

To perform a firmware upgrade recovery, do the following:

1. Unplug the switch's power adapter cable.
2. Slide the *Firmware Upgrade Recovery Switch* (see page 8) to the **Recover** position.
3. Use the Firmware Upgrade Cable (provided with this unit), to connect a COM port on your computer with the firmware upgrade port of the switch.
4. Plug the switch's power adapter cable back in.
5. Follow the upgrade procedures that begin with the *Starting the Upgrade* section (see page 54).
6. After the upgrade completes successfully, unplug the switch's power adapter cable, once again.
7. Slide the *Firmware Upgrade Recovery Switch* back to the **Normal** position.
8. Plug the switch's power adapter cable back in.

This Page Intentionally Left Blank

Appendix

Safety Instructions

General

- Read all of these instructions. Save them for future reference.
- Follow all warnings and instructions marked on the device.
- Do not place the device on any unstable surface (cart, stand, table, etc.). If the device falls, serious damage will result.
- Do not use the device near water.
- Do not place the device near, or over, radiators or heat registers.
- The device cabinet is provided with slots and openings to allow for adequate ventilation. To ensure reliable operation, and to protect against overheating, these openings must never be blocked or covered.
- The device should never be placed on a soft surface (bed, sofa, rug, etc.) as this will block its ventilation openings. Likewise, the device should not be placed in a built in enclosure unless adequate ventilation has been provided.
- Never spill liquid of any kind on the device.
- Unplug the device from the wall outlet before cleaning. Do not use liquid or aerosol cleaners. Use a damp cloth for cleaning.
- The device should be operated from the type of power source indicated on the marking label. If you are not sure of the type of power available, consult your dealer or local power company.
- The device is designed for IT power distribution systems with 230V phase-to-phase voltage.
- To prevent damage to your installation it is important that all devices are properly grounded.
- The device is equipped with a 3-wire grounding type plug. This is a safety feature. If you are unable to insert the plug into the outlet, contact your electrician to replace your obsolete outlet. Do not attempt to defeat the purpose of the grounding-type plug. Always follow your local/national wiring codes.
- Do not allow anything to rest on the power cord or cables. Route the power cord and cables so that they cannot be stepped on or tripped over.

- If an extension cord is used with this device make sure that the total of the ampere ratings of all products used on this cord does not exceed the extension cord ampere rating. Make sure that the total of all products plugged into the wall outlet does not exceed 15 amperes.
- To help protect your system from sudden, transient increases and decreases in electrical power, use a surge suppressor, line conditioner, or uninterruptible power supply (UPS).
- Position system cables and power cables carefully; Be sure that nothing rests on any cables.
- Never push objects of any kind into or through cabinet slots. They may touch dangerous voltage points or short out parts resulting in a risk of fire or electrical shock.
- Do not attempt to service the device yourself. Refer all servicing to qualified service personnel.
- If the following conditions occur, unplug the device from the wall outlet and bring it to qualified service personnel for repair.
  - The power cord or plug has become damaged or frayed.
  - Liquid has been spilled into the device.
  - The device has been exposed to rain or water.
  - The device has been dropped, or the cabinet has been damaged.
  - The device exhibits a distinct change in performance, indicating a need for service.
  - The device does not operate normally when the operating instructions are followed.
- Only adjust those controls that are covered in the operating instructions. Improper adjustment of other controls may result in damage that will require extensive work by a qualified technician to repair.
- Do not connect the RJ-11 connector marked “UPGRADE” to a public telecommunication network.

Rack Mounting

- Before working on the rack, make sure that the stabilizers are secured to the rack, extended to the floor, and that the full weight of the rack rests on the floor. Install front and side stabilizers on a single rack or front stabilizers for joined multiple racks before working on the rack.
- Always load the rack from the bottom up, and load the heaviest item in the rack first.
- Make sure that the rack is level and stable before extending a device from the rack.
- Use caution when pressing the device rail release latches and sliding a device into or out of a rack; the slide rails can pinch your fingers.
- After a device is inserted into the rack, carefully extend the rail into a locking position, and then slide the device into the rack.
- Do not overload the AC supply branch circuit that provides power to the rack. The total rack load should not exceed 80 percent of the branch circuit rating.
- Make sure that all equipment used on the rack – including power strips and other electrical connectors – is properly grounded.
- Ensure that proper airflow is provided to devices in the rack.
- Ensure that the operating ambient temperature of the rack environment does not exceed the maximum ambient temperature specified for the equipment by the manufacturer.
- Do not step on or stand on any device when servicing other devices in a rack.
- **Caution:** Slide/rail (LCD KVM) mounted equipment is not to be used as a shelf or a work space.

Technical Support

International

- For online technical support – including troubleshooting, documentation, and software updates: **http://support.aten.com**
- For telephone support, see *Telephone Support*, page iii.

North America

Email Support		support@aten-usa.com
Online Technical Support	Troubleshooting Documentation Software Updates	http://www.aten-usa.com/support
Telephone Support		1-888-999-ATEN ext 4988

When you contact us, please have the following information ready beforehand:

- Product model number, serial number, and date of purchase.
- Your computer configuration, including operating system, revision level, expansion cards, and software.
- Any error messages displayed at the time the error occurred.
- The sequence of operations that led up to the error.
- Any other information you feel may be of help.

Connection Table

The following table indicates the relationship between the number of KH3116, KH0116, CS-1716, or ACS-1216A units that are cascaded from the KL3116 and the number of computers that they control on a daisy chained installation:

No.	Computers	No.	Computers	No.	Computers	No.	Computers
1	1–16	9	129–144	17	257–272	25	385–400
2	17–32	10	145–160	18	273–288	26	401–416
3	33–48	11	161–176	19	289–304	27	417–432
4	49–64	12	177–192	20	305–320	28	433–448
5	65–80	13	193–208	21	321–336	29	449–464
6	81–96	14	209–224	22	337–352	30	465–480
7	97–112	15	225–240	23	353–368	31	481–496
8	113–128	16	241–256	24	369–384	32	497–512

OSD Factory Default Settings

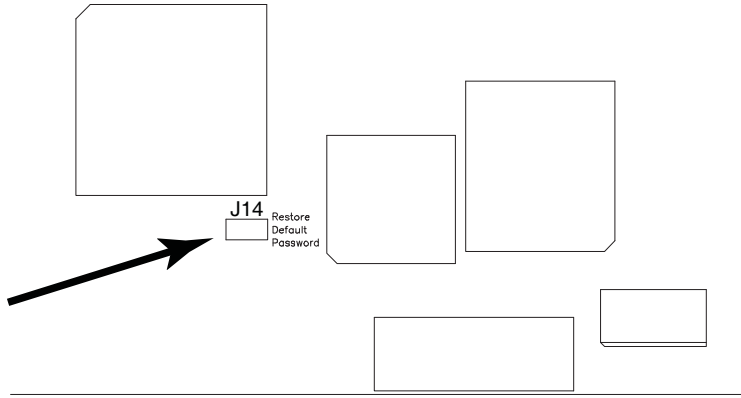
The factory default settings are as follows:

Setting	Default
OSD Hotkey	[Scroll Lock] [Scroll Lock]
Port ID Display Position	Upper Left Corner
Port ID Display Duration	3 Seconds
Port ID Display Mode	The Port Number plus the Port Name
Scan Duration	5 Seconds
Scan/Skip Mode	All
Screen Blanker	0 (Disabled)
Logout Timeout	0 (Disabled)
Beeper	Y (Activated)
Accessible Ports	F (Full Access) For all Users on all Ports
Hotkey Command Mode	Y (Activated)
Set Operating System	Win
Keyboard Language	Auto
Set Console Mode	0: Dual-Console
Hotkey	[Num Lock] + [-]
Restore Default Values	N
Clear the Name List	N
Reset Station IDs	Y
Firmware Upgrade	N

Clear Login Information

If you are unable to perform an Administrator login (because the Username and Password information has become corrupted, or you have forgotten it, for example), you can clear the login information with the following procedure:

1. Power off the switch and remove the top cover from the unit chassis.
2. Short the jumper labeled *Default Password* on the switch's main board.



3. Power on the switch.

   When you power the switch on, the following message appears on the LCD display:

   ```
   USERNAME AND PASSWORD INFORMATION HAS BEEN CLEARED.
   PLEASE POWER OFF THE SWITCH, REMOVE THE JUMPER, CLOSE
   THE CASE, THEN RESTART.
   ```

4. After you start back up, the OSD login function acts exactly the way it did the first time the switch was run (see page 29) and you can reset passwords for the Administrators and Users.

Optional Rack Mounting

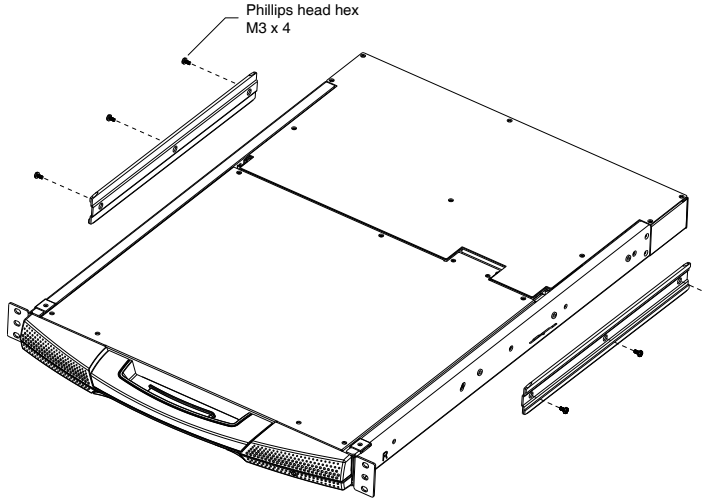
For convenience and flexibility, three optional rack mounting kits are available:

- A long bracket standard rack mounting kit for 68–105 cm racks;
- A short bracket Easy-Installation rack mount kit for 57–70 cm racks;
- A long bracket Easy-Installation rack mount kit for 68–105 cm racks.

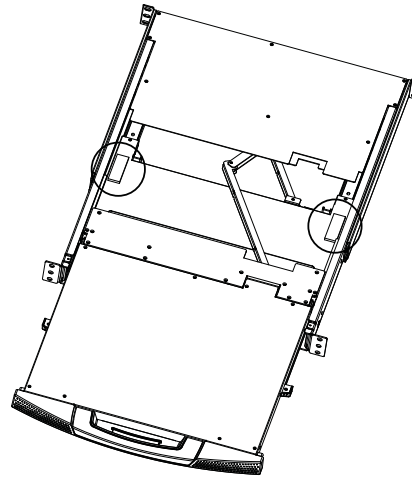
To install the long bracket standard rack mount kit, simply replace the short L brackets on the standard rack mount kit with the long ones, and mount the switch according to the instructions given on page 12.

With an *Easy-Installation*, kit, one person can mount the switch. To install the *Easy-Installation* kit, do the following:

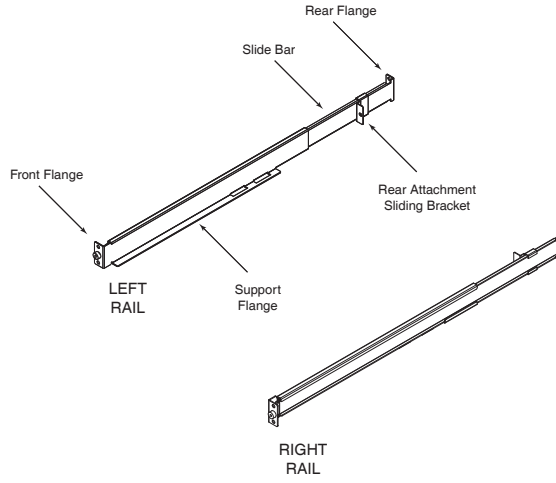
1. Remove the standard L brackets and the side mounting brackets from both sides of the switch.



2. Packing material has been inserted to protect the KL3116 Hideaway™ LCD KVMP Switch during shipping. Slide the LCD module out until the packing material is visible. Remove the packing material before installing the unit, as shown in the diagram below.

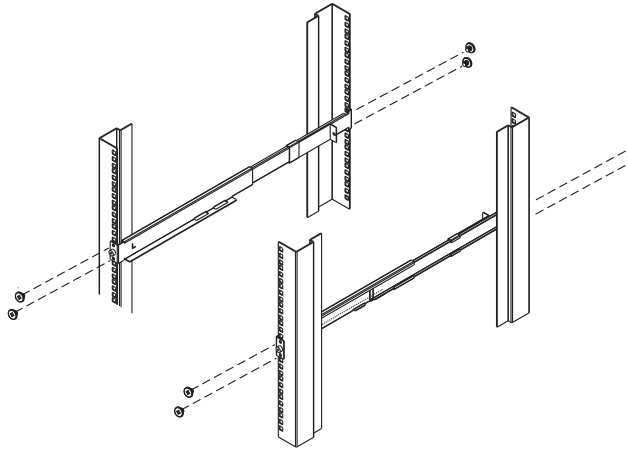


3. Attach the left and right *easy-installation* mounting rails to the inside of the rack. The flange that supports the switch will be to the inside.

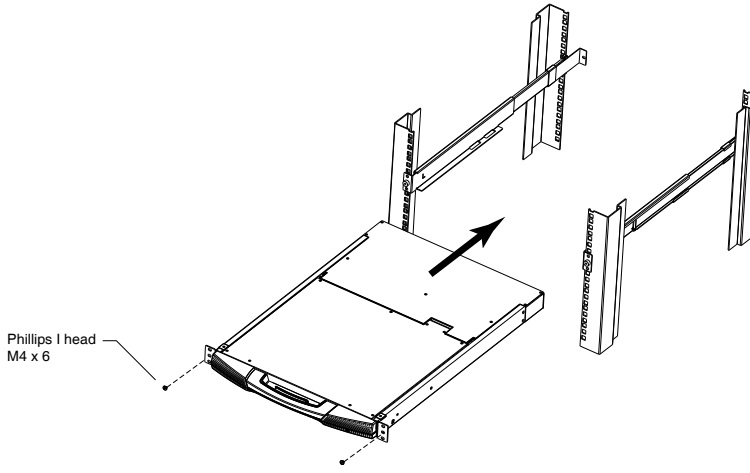


a) Screw the front flanges to the rack first.

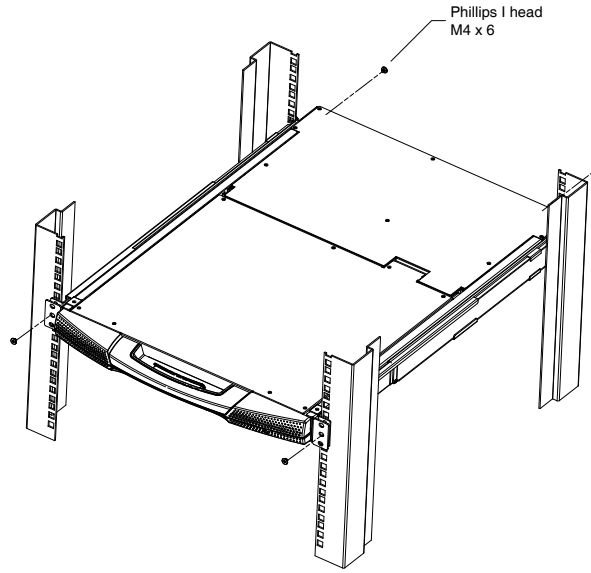
b) Slide the bars with the rear flanges toward the rack until the flanges make contact with the rack, then screw the rear flanges to the rack.



4. Slide the switch onto the support flanges. Use the screws supplied with this package to loosely attach the front of the switch to the front of the rack (only tighten the screws part way).



5. Slide the rear attachment sliding brackets along the slide bars until they contact the rear of the switch, then use the screws supplied with this package to attach the bars to the rear of the switch (tighten the screws all the way).



6. Slide the switch open and closed a couple of times to be sure that it is properly aligned and operating smoothly. (See page 19 for opening and closing procedures.)
7. After determining that the switch is properly lined up and operating correctly, finish up by fully tightening down the partially tightened front attachment screws inserted in step 3.

Dedicated Invocation Keys

Two dedicated keys are provided on the keyboard module to make it easy to invoke Hotkey Mode and the OSD (as shown in the diagram below):

Note: These keys are toggles. Press once to invoke the feature, press again to exit.

Specifications

Function		KL3116
Computer Connections	Direct	16
	Max	512 (via Daisy Chain)
Port Selection		Pushbutton switches; OSD; Hotkeys
Connectors	KVM Ports	16 x SPHD-15 F (yellow)
	Daisy Chain	1 x DB-25 M (black)
	Firmware Upgrade	1 x RJ-11 F (black)
	External Console Port	1 x SPHD-15 M (green)
	USB Port	1 x USB Type A F (white)
	External Mouse Port	1 x 6-pin Mini-DIN F (green)
	Power	1 x 3 Prong AC Socket
LEDs	On Line	16 (green)
	Selected	2 x 7-segment LED display (Switch)
		2 x 7-segment LED display (Port)
	Power	1 (blue)
	Lock	1 x Num Lock (green) 1 x Caps Lock (green) 1 x Scroll Lock (green)
	LCD Power	1 x LCD Power On/Off (orange)
Switches		1 x Slide (FW Upgrade Recovery)
I/P Rating		100–240VAC, 50/60Hz; 1A
Power Consumption		120V / 35.2W; 230V / 41.8W
Keyboard/Mouse Emulation		PS/2; USB
Scan Interval		1–255 seconds
Video		1280x1024@75Hz; DDC2B
Environment	Operating Temperature	0–40° C
	Storage Temperature	-20–60° C
	Humidity	0–80% RH, Non-condensing
Physical Properties	Housing	Metal
	Weight	17.50 kg
	Dimensions (L x W x H)	70.50 x 48.20 x 4.40 cm (19" / 1U)

Troubleshooting

General

Problem	Solution
Keyboard and/or mouse do not work after computer boots up.	For computers with PS/2 connectors, if you are using 2L-520xP cables, make sure that all the connectors (keyboard, video, and mouse) are plugged into their ports on the computer before starting the computer. Plugging the cables in after the computer has booted will not resolve the problem.
When I emulate the Sun keyboard, I can't go into OK Mode ([Stop] [A]).	To go into OK Mode, use the following key sequence: 1. Press and release [Ctrl]. 2. Press and hold [T]. 3. Press and hold [A]. 4. Release [T] and [A] together.
There are ghost images on the external monitor.	The distance between the external console and the KL3116 is too great. The maximum VGA cable distance should not exceed 20m and, in some cases, may need to be shorter. Replace the VGA cable with one of an appropriately short length.

Sun Systems

Problem	Solution

Video display problems with HDB-15 interface systems (e.g. Sun Blade 1000 servers).	The display resolution should be set to 1024 x 768 @ 60Hz.
	Under Text Mode:
	1. Go to **OK mode** and issue the following commands:
	`setenv output-device screen:r1024x768x60`
	`reset-all`
	Under XWindow:
	1. Open a console and issue the following command:
	`m64config -res 1024x768x60`
	2. Log out.
	3. Log in.

Video display problems with 13W3 interface systems (e.g. Sun Ultra servers).*	The display resolution should be set to 1024 x 768 @ 60Hz.
	Under Text Mode:
	1. Go to **OK mode** and issue the following commands:
	`setenv output-device screen:r1024x768x60`
	`reset-all`
	Under XWindow:
	1. Open a console and issue the following command:
	`ffbconfig -res 1024x768x60`
	2. Log out.
	3. Log in.

***** These solutions work for most common Sun VGA cards. If these procedures fail to resolve the problem, consult the manual for the Sun VGA card.

Limited Warranty

ALTUSEN warrants this product against defects in material or workmanship for a period of one (1) year from the date of purchase. If this product proves to be defective, contact ALTUSEN's support department for repair or replacement of your unit. ALTUSEN will not issue a refund. Return requests can not be processed without the original proof of purchase.

When returning the product, you must ship the product in its original packaging or packaging that gives an equal degree of protection. Include your proof of purchase in the packaging and the RMA number clearly marked on the outside of the package.

This warranty becomes invalid if the factory-supplied serial number has been removed or altered on the product.

This warranty does not cover cosmetic damage or damage due to acts of God, accident, misuse, abuse, negligence or modification of any part of the product. This warranty does not cover damage due to improper operation or maintenance, connection to improper equipment, or attempted repair by anyone other than ALTUSEN. This warranty does not cover products sold AS IS or WITH FAULTS.

IN NO EVENT SHALL ALTUSEN'S LIABILITY EXCEED THE PRICE PAID FOR THE PRODUCT. FURTHER, ALTUSEN SHALL NOT BE RESPONSIBLE FOR DIRECT, INDIRECT, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES RESULTING FROM THE USE OF THE PRODUCT, ITS ACCOMPANYING SOFTWARE, OR ITS DOCUMENTATION. ALTUSEN SHALL NOT IN ANY WAY BE RESPONSIBLE FOR, WITHOUT LIMITATION, LOSS OF DATA, LOSS OF PROFITS, DOWNTIME, GOODWILL, DAMAGE OR REPLACEMENT OF EQUIPMENT OR PROPERTY, AND ANY EXPENSES FROM RECOVERY, PROGRAMMING, AND REPRODUCTION OF ANY PROGRAM OR DATA.

ALTUSEN makes no warranty or representation, expressed, implied, or statutory with respect to its products, contents or use of this documentation and all accompanying software, and specifically disclaims its quality, performance, merchantability, or fitness for any particular purpose.

ALTUSEN reserves the right to revise or update its product, software or documentation without obligation to notify any individual or entity of such revisions, or update.

For details about extended warranties, please contact one of our dedicated value added resellers.

Index

A

Auto Scanning
- Invoking, 46
- Pausing, 46
- Stopping, 46

B

Basic Operation, 19

C

Cables, 4
Clear Login Information, 65
Closing the Console, 23
Components, 6
Computer Connection Table, 63
Console
- Closing, 23
- Opening, 19
- Opening Separately, 19
- Opening Together, 21

E

Emulation
- Mac System Keyboards, 51
- Sun System Keyboards, 52

F

Factory Default Settings, 64
Features, 2
Firmware Upgrade
- Failed, 57
- firmware upgrade port, 53
- Preparation, 53
- Recovery, 57
- Starting, 54
- Succeeded, 56

Front View, 6

H

Hardware Requirements
- Cables, 4
- Computer, 4

Hot Plugging, 27
Hotkey
- Port access, 44
- Summary Table, 50

Hotkey Mode
- exiting, 44
- Operation, 44

Hotkeys
- Port OS configuration, 49

I

Installation, 11
- Daisy Chaining, 17
- Single Stage, 14

Introduction, 1

K

Keyboard Emulation
- Mac Systems, 51
- Sun Systems, 52

Keyboard Module, 7

L

LCD
- Adjustment Settings, 26

LCD Module, 8
LCD OSD
- Configuration, 25

Logging In, 29

M

Mac Systems
- Keyboard Emulation, 51

O

Online
- Registration, iii

Opening the Console, 19
Operating Precautions, 22
OSD
- Factory Default Settings, 64
- Functions, 32
- Hotkey, 29
- Main Screen Headings, 31
- Navigation, 31
- Overview, 29
- Password, 29

P

Password, 29
Port ID Numbering, 28
Port OS Configuration, 49
Port Selection, 28
Powering Off and Restarting, 27

R

Rack Mounting
- Optional, 66
- Standard, 12

Rear View, 9
Restarting, 27
RoHS, ii

S

Safety Instructions
- General, 59
- Rack Mounting, 61

SJ/T 11364-2006, ii
Skip Mode, 47
Specifications, 71
Station IDs, 17
Station Positions
- Switching, 27

Sun Systems
- Keyboard Emulation, 52

Switching Station Positions, 27
System Requirements, 4

T

Technical Support, 62
Telephone Support, iii
Troubleshooting, 72

U

User Notice, iii